Index to Contents of This Issue

AIRPORTS AND AVIATION
Fewer But Better Airports 15
Inter City-State Airport Dedicated..... 15
The Bluegrass Airport 15

BUSINESS MACHINES AND SYSTEMS
Deed Copying in Darien..... 92
Central Mailroom Speeds and Saves..... 110
Practical Advances in the Mechanics of Tax Billing 120

CITIZENS AND GOVERNMENT
National Guard Campaign Focuses on Local Community 5
Elaborate Rededication Programs 114

CITY MANAGER PLAN
Recent City Manager Appointments.. 127, 131

CONFERENCES AND CONVENTIONS
Conventions—When and Where 130a

CONSTRUCTION
Pre-stressed Concrete 112

EDUCATION
New Courses in Planning Offered by Several Universities 125

FINANCE AND TAXATION
Let's Think Straight on City Finances... 5
Your Local Community Chest and the American Tradition 7
A Comparison of Municipal Debts 87
Minnesota Authorizes Slum Clearance Tax 116
Practical Advances in the Mechanics of Tax Billing 120
Municipal Bond Market 131

GOVERNMENT AND ADMINISTRATION
Three-way Municipal Consolidation Present Unusual Problems 88
Behind the Scenes in a Thriving City.... 90
Atlanta Annexation Fails 93
System in a City Clerk's Office 96
GRA Celebrates 40th Anniversary 131

HOUSING
Home Building Costs Expected to Remain High 7
Reorganization Plan Consolidates Federal Housing Functions 120

INTERRACIAL RELATIONS
Segregation is Not the Answer 115
Cities Back Racial Amity Units 116

LAWS AND DECISIONS
The City and Milk Pasteurization..... 98
Legal Notes and Decisions 126
Zoning and Planning Notes 128

LIGHTING, OUTDOOR
Standards for Well-Planned Street Lighting 141
Incandescents Replace Arcs 143
Street Lighting Costs in Four Big Cities. 145

NEWS AND ILLUSTRATIONS
Items from Manufacturers 159

NUISANCES
Noise Abatement Awards Go To 14 Cities 5
Providence Clears the Air 121

PLANNING AND ZONING
CED Statement Comments on Community Development Corporations 5
Britain's New Planning Act 88
Cincinnati Starts Topographical Survey.. 119
Zoning and Planning Notes 128
Practical Aids to Better Zoning Administration 129

POWER PLANTS
Burbank's Power Story 108

PUBLIC HEALTH
The City and Milk Pasteurization 98

PUBLIC RELATIONS
The City Tells Its Story..... 123

PUBLIC SAFETY
Fire-Station Design 17
Tacoma's Fire Equipment Best Ever 17
Behind the Scenes in a Thriving City.... 90
Fire-Fighting in Buffalo 99

SEWERAGE AND SEWAGE TREATMENT
Foul—But Do You Drink It? 13
Power Front or Rear 13
Rhode Island Means Business 13
A 490 Percent Overload 100
Sludge Dewatering Development 102

STREET CLEANING AND REFUSE DISPOSAL
A Resumé of Fill Practices 11
Traveling Advertisements for Clean Streets 11
Behind the Scenes in a Thriving City ... 90
Winnipeg, Canada, Builds a New Incinerator 104
The Lexington, Ky., Leaf Baler 111

STREET CONSTRUCTION AND MAINTENANCE
Can Construction Costs Hold the Line?.. 19
Cincinnati's 1946 Record 19
New Jersey Corrects State Aid Inequity 19
National Highway Network to Reach 182 Large Cities 89
Cincinnati Studies Traffic Relief 103

TRAFFIC AND TRANSPORTATION
Let a Traffic Engineer Do It 133
Parking Meters Operate in 1,209 Cities .. 133
Shoppers to Pay for Parking Lots 135
Kansas City Keeps Up to Date with New Street Signs 135
Radar Catches Connecticut's Speeders.. 135
A Thousand New Signs Keep Traffic Alert 137
New Metered-Parking Lot 137
"Super Twin Gives Real Promise" 137

UNITED NATIONS
U. N. Headquarters Report Receives Wide Acclaim 117

WAR MEMORIAL
Palmerton's Living Memorial 118

WATER SUPPLY AND PURIFICATION
Lancaster, Pa., Likes Chloramines 9
Milwaukee's Handy Crane 9
Foul—But Do You Drink It?..... 13
Behind the Scenes in a Thriving City .. 90
Lancaster Prefers Chloramines 94
A Pipe Cleaning Demonstration 106
Palmerton's Living Memorial 118
N. Y.'s Modern Treatment Plant 122

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See pp. 21, 22, 23, 24, 26, 28, 149, 151, 153, 155, 157 for catalogs and publications on municipal and civic subjects.

List of coming conventions, page 130a. **Index to Advertisements, page 194**

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Our Municipal Notebook

Let's Think Straight on City Finances

ONE of the municipal fallacies that turns up now and again, particularly in various technical meetings, and that certainly should have been corrected by this time is the hypothesis that cities are rolling in wealth—that cities today are in better financial condition to meet current expenditures than they have been in many, many years.

This type of reasoning is not what one would normally expect from representatives of our meticulous technical organizations dealing with municipal problems. And to mention statements like this to municipal officials who have to balance increased budgets against tax incomes fixed by state laws over which the city has no control only irritates them at best, and at worst causes them to lose their respect for the organization which makes them.

Let's look at a few examples. Cincinnati has for many years been one of America's outstanding examples of civic efficiency. Yet this year that city finds itself operating at a deficit for the first time in many years. Dayton, Ohio, operating under the skilled leadership of the veteran city manager, F. O. Eichelberger, also will have a deficit this year. Columbus, Ohio, another city whose operation can scarcely be criticized, probably will start exceeding its budget this month. Pittsburgh, Pa., faces an increased cost of operation amounting to $2,000,000 per year through legislative acts, and finds that it must meet this through income from a limited tax base.

Certain services, such as water, electricity, and in some cases sewerage, which are based on a charge to the user that makes them self-supporting, are not in such an embarrassing position. But even in these cases we find certain examples of the need to raise the rates charged in order to meet the rising cost of operation and to finance new construction. Whenever a service has to increase its rates, it can scarcely say its present financial status is healthy.

The facts are that an adjustment in rates does restore to health these services that are normally self-supporting. The fact further is that an adjustment in legislative thinking on the part of our states, giving the cities their rightful share of money raised within the borders in return for services that they perform, would in nearly all cases make them financially healthy also.

But until this happens, those who talk about municipal matters should be careful when spreading optimistic news about finances. For most cities the picture of the borrowing capacity for capital improvements is much brighter, however. As Frederick L. Bird points out in his article on pages 87-88 of this issue, "*If the average city were to double its over-all net debt it would still be in line with what was considered a relatively safe burden even in the acute years of the 1930's depression.*"

National Guard Campaign Focuses on Local Community

THE National Guard recruiting drive opening September 16 will stress the importance of the local community's contribution to the national defense structure. Undertaken at the specific direction of President Truman, the drive will last for two months, closing on November 16.

The campaign literature points out the benefits to communities for assistance in recruitment. In addition to having a force near at hand to give needed relief in time of disaster, the communities at which National Guard units are stationed receive added payrolls of $36,000 annually in federal funds for each infantry company.

Another community advantage is the fact that local National Guard units often become social centers. The opportunity is afforded enlistees to associate with the leaders of the community and to take part in the athletic, recreational, and social activities of the local organization.

The campaign's immediate objective is the enlistment of 88,888 men during the two-month duration of the drive. State objectives or quotas, based on their share of the Guard's ultimate strength of 682,000 officers and men, range from 100 for Nevada to 8,100 for New York.

CED Comments on Community Development Corporations

MEETING the Special Problems of Small Business, a statement on national policy recently issued by the Research and Policy Committee of the Committee for Economic Development, comments on the importance of community aids to the financing of new business enterprise. It declares:

A few communities have set up special funds and development corporations to meet the needs for equity funds on the part of promising new or small businesses. The community development corporations established in Baltimore, Louisville, Boston, and Easton, Pa., provide good illustrations of pre-war community developments of this type. More recently, reconversion requirements have given rise to projects for counseling and financing small local enterprises—Jobs, Inc., at Albert Lea, Minn., is a notable example of postwar organization for expansion of local business.

Such activities are worthy of encouragement and imitation as steps in the right direction. However, the cases where financing help is needed for business enterprises, especially smaller enterprises, run into the thousands — whereas community development funds are likely to reach out to a mere handful of particularly favorable propositions. While applauding the efforts of community development corporations and urging their extension, the Committee believes that additional measures are necessary to meet the requirements of small and intermediate enterprises for more adequate equity financing.

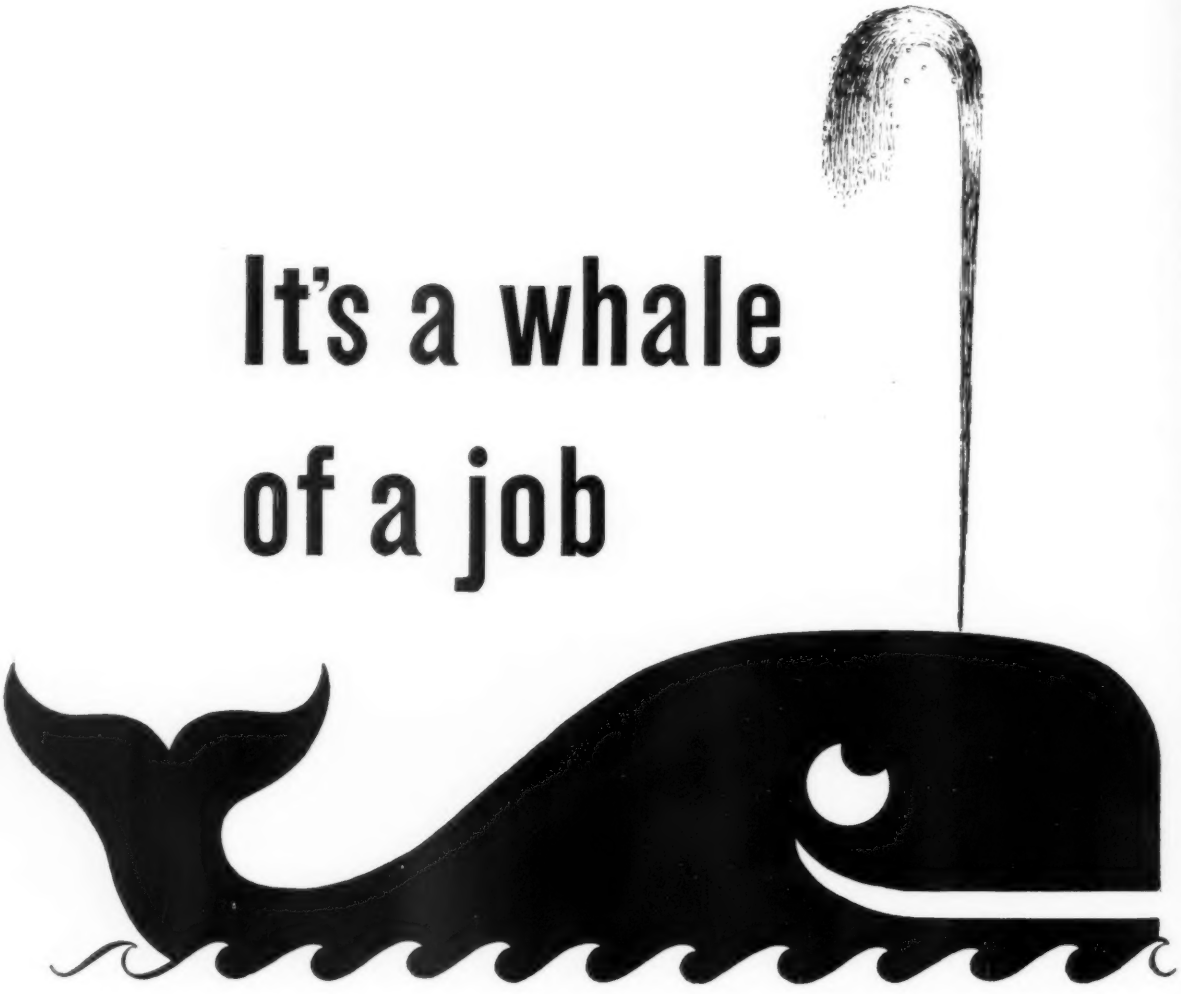
Noise Abatement Awards Go to 14 Cities

FOURTEEN cities in the United States were cited on August 21 by the National Noise Abatement Council for outstanding work aimed at reducing needless noise in home, street, and factory, and for special effort to educate the public on that subject.

The Achievement Award winners for 1947, reported by Edwin S. Graybill, President of the Council, were: New York, N. Y., Chicago, Ill., Memphis, Tenn., New Orleans, La., Baltimore, Md., Salt Lake City, Utah, Des Moines, Iowa, Little Rock, Ark., Albuquerque, N. M., Jacksonville, Fla., Rochester, N. Y., Beverly Hills, Calif., Evansville, Ind., and Orlando, Fla. Memphis was honored for the sixth consecutive year.

"The fact a city receives a National Noise Abatement Council Achievement Award does not mean necessarily that it is the quietest city in its section of the country," said Paul J. Washburn of New York, the Council's secretary; "it means that the city has done a good job in educating the public, not only in the harmful effects of excessive and intermittent noises, but also in the contributions that can be made by every thoughtful citizen in the solution of the problem."

Awards are made to cities and towns where effective campaigns are conducted with particular emphasis on the



It's a whale of a job

We're adding new telephones at the rate of about 300,000 a month. That is 10,000 a day . . . And still it isn't enough.

SINCE V-J Day, we've added more than 5,500,000 telephones. But fast as we put in one telephone, there comes an order for another. Sometimes two more.

So even though we're going full speed ahead, we haven't been able to catch up with all the orders for telephone service.

We're moving faster than anyone thought possible — with shortages and everything — and we have broken all kinds of records.

It's a whale of a job and we're eager and impatient to get it done. For we don't like to keep anybody waiting for telephone service.

BELL TELEPHONE SYSTEM

Annual Noise Abatement Week. Further information about the program of the National Noise Abatement Council may be obtained from its offices at 9 Rockefeller Plaza, New York 20, N. Y.

Home Building Costs Expected to Remain High

A SPOT survey of leaders in home building in the East, Middle West, Pacific Coast, Rocky Mountains, and Southwest regions, recently completed by the National Committee on Housing, Inc., 1 Madison Ave., New York 10, N. Y., indicates that home building costs throughout the nation are expected to continue at present high levels or move still higher.

Fred H. Ludwig, President, in a memorandum reporting the findings to members of the organization, stated some three months ago easing prices for some materials, particularly lumber, gave rise to hopes for lower construction costs. However, in many cases, these price reductions were offset by labor-wage increases in the building trades. Now, according to the survey, materials prices have been established above the low point and appear to be moving upward again.

Somewhat higher productivity by labor and a smoother flow of materials are helping to offset a part of the increase in materials costs and wage rates, the memorandum declares. The supply of materials has improved substantially, although a number of shortages still exists, notably in iron and steel pipe of some types, nails, heating circulators, and millwork.

Your Local Community Chest and the American Tradition

MANY of the great traditions of American civic and social life are not graced with the clinging ivy of age. In the very best expressions of democracy, significant movements often come into being with a healthy spontaneity and mature into accepted practices with amazing rapidity.

In October, a young but great American tradition will be reflected in more than seven hundred individual Community Chest campaigns. This device for fusing the finest qualities of emotional concern and hard-headed business sense in a federation of community interests, though little more than twenty years of age, is one of the most firmly rooted of all our cooperative ventures. Already the Community Chest idea has survived the severest tests of depression and boom prosperity and the problems of both war and peace.

The Chest movement is here to stay as a demonstrated effective cooperation of a free people.

It is not enough that it is permanent; it is dangerous to accept its existence with the mere stolidness of tradition. It is the responsibility of community leadership to keep the movement aglow with vitality; each citizen may make his local subscription to his own institution and organization as a free man with a cheerfulness and generosity which befits his high privilege.

THE AMERICAN CITY concerns itself primarily with the problems and opportunities of municipal government and with progress in community planning and development. Such progress in many municipalities has paralleled the growth in civic cooperation and in social conscience evidenced in the Community Chest movement. Public officials and employes represent a leadership and an influential segment of population which can be a vital factor in the success of a Chest campaign.

This leadership implies the responsibility of proffered cooperation with Community Chest executives and volunteers, rather than casual interest resulting from outside motivation. Mayors, city managers, department heads, and members of councils and commissions will be alert to opportunities to act constructively as individuals or as groups; employes will respond to group solicitation plans with adequate participation. The confidence which voters and citizens have placed in their municipal government will be merited through these telling factors of leadership and cooperation in the Chest campaigns—truly modern examples of the most valued of American traditions.

The accompanying drafts suggest possible forms of a Mayor's Proclamation.

Alternative Suggestions for a Mayors' Proclamation

PROCLAMATION

At this time each year the citizens of this community are asked to work for and contribute to the Community Chest for the support of its Red Feather services.

Studies show that four out of ten families in Community Chest areas benefit directly from Red Feather services. It is obvious that everybody in the community benefits when children are given care, when the sick are treated and nursed back to health, when youngsters have the opportunity to learn and play in wholesome places, and when the aged are given aid.

Thus, everybody in our community stands to gain personally, in some degree, from the pledges we make now to the Community Chest campaign. If for no other reason than enlightened self-interest, all of us ought to pledge to the limit of our ability.

I am so thoroughly convinced of the efficiency and economy of the Community Chest and its Red Feather services that I am happy to exert whatever influence I have as mayor to convince the citizens of our community that they have a responsibility to support this campaign. It is my earnest hope that the generosity of our citizens will put this campaign well over its goal.

Date .....

.....

Mayor

The above is a form of Proclamation suggested by James D. Gamble, of the Public Relations Staff, Community Chests of America. At the right is an alternative form suggested by Bart R. Brammer, Secretary, American City Bureau.

PROCLAMATION

Hometown is now engaged in the organization of civic resources and the mobilization of the best in community interests and emotions to make our annual Community Chest appeal the outstanding success which it merits.

This success will be a two-fold demonstration. It will evidence our generosity as individuals and, at the same time, the good business sense which is always a part of community cooperation motivated by high ideals.

Pride in our community and concern for its future and the welfare of ourselves and our families will prompt not only adequate financial support to the cause of the Community Chest, but will make us enthusiastic advocates of the basic democracy which this federation of interests so vividly proves.

As Mayor of Hometown and as one who appreciates the fine privileges of citizenship, I hereby proclaim the period of ..... to ..... as Community Chest week and bespeak for our programs of health, welfare, and constructive citizenship the active interest and generous support which they so greatly deserve and I commend to all of my fellow townsmen the volunteer campaign solicitors as worthy of cordial reception and tangible appreciation.

In witness whereof I have placed my signature and have ordered that the seal of our city be affixed.

Dated .....

.....

Mayor

XUM

COLUMBIA, MISSOURI'S *New* SPHEROIDAL ELEVATED TANK

THIS 1,000,000-gal. Horton tank, recently erected at Columbia, Mo., is a spheroidal structure supported on two rings of cylindrical columns, 134 ft. to bottom.

Water works engineers and city officials at Columbia, however, see beyond the streamlined beauty of this modern structure. It was erected to serve a dual purpose in the local water system. The tank, together with two new fire stations and larger mains in several areas, is expected to improve the insurance rating of the city. Secondly, the elevated tank will provide sufficient storage capacity so that the service pumps may be stopped for a period of 3 to 4 hours in the evening during peak load periods on the power plant. The tank can be refilled at off-peak periods with resultant savings in pumping costs.

The water supply is taken from three deep wells ranging from 1200 ft. to 1500 ft. in depth. The water is pumped into underground reservoirs having a capacity of 4½ million gallons and repumped from these reservoirs into the distribution system by steam driven service pumps. The new elevated tank is located approximately two miles from the pumping plant and is connected to the distribution system at that point.

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Chicago 4.....2127 McCormick Bldg.
San Francisco 11....1233-22 Battery Street Bldg.
Philadelphia 3...1616-1700 Walnut Street Bldg.
Atlanta 3.....2114 Healey Bldg.
Havana.....402 Abreu Bldg.
Detroit 26.....1501 Lafayette Bldg.

Plants in BIRMINGHAM, CHICAGO and GREENVILLE, PENNSYLVANIA

Water Supply and Treatment

Lancaster, Pa., Likes Chloramines

THE parade of those using heavy doses of chlorine to do virtually the whole job of water treatment, reserving the filters for little more than a mechanical strainer, has been impressive during the past few years. Without a doubt we have seen and shall see in the future a definite trend towards superchlorination, in one form or another, to produce a free residual.

Consequently, when we see a plant such as the one at Lancaster, Pa., getting the same benefits, freedom from tastes and odors, good filter operation, excellent bacteriological analyses, and at the same time using a chloramine residual for sterilization, we can fairly ask the reason.

And the reason is not too difficult to ascertain. It goes back to certain of those well-known basic water works principles—principles which we sometimes lose sight of when studying water-supply development. Here are two of them:

1. *The settling basin is the heart of the water-treatment process.* Lancaster gives the water roughly half again as much settling as do most other plants. This, of course, greatly relieves the load on the filters.

2. *Activated carbon bodily removes offensive tastes and odors.* Other processes change the ingredients that cause the difficulty, but Lancaster uses activated carbon as a policeman to take the culprit away.

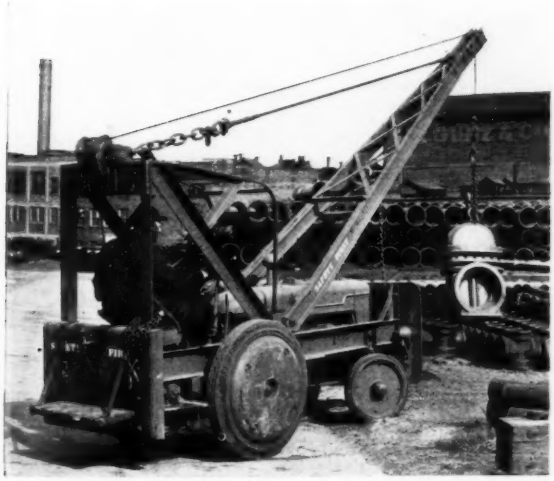
The fire risk will be lower in this San Leandro, Calif., subdivision when new fire hydrants are installed. The East Bay Municipal Utilities District is supplying the service. The crew is using a Gardner-Denver air compressor powered by a Caterpillar diesel engine to make the pavement cut.

Milwaukee's Handy Crane

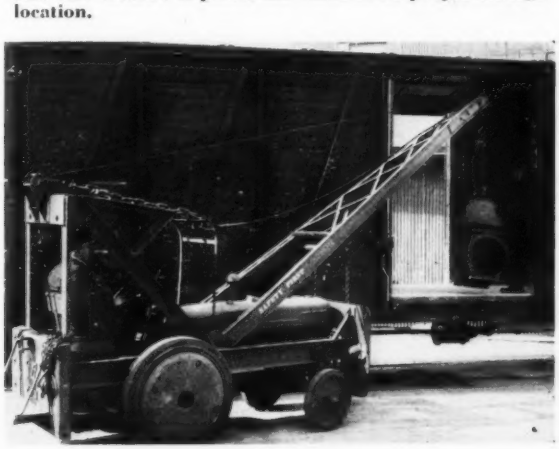
A SMALL crane with the boom pin-mounted on an International tractor, the boom being able to move vertically but having no horizontal swing, is making work easier at the Milwaukee Department of Public Works. The crane on the tractor makes it possible for a man to do the work normally required of a whole crew.

A ⅝-inch cable holds the boom of the crane from dropping, and a pair of chains on the front of the tractor limits the boom's upward movement. A half-inch cable connected to a power-driven drum provides the lifting power for the crane.

The crane has a capacity of 3 tons and has proved useful in unloading valves from box cars and fittings from low gondolas. Furthermore, it can handle most of the heavy materials in the storage yard and can load materials on trailers and handle hydrants and timbers. Its maneuverability by reason of the short turning radius of the tractor makes it useful in the storage yard.



Left: Milwaukee's tractor-crane picks up a valve from a box car. Below: It places the valve in its proper storage location.



XUM

Stairway to Steel-Service

One Call Brings Quick Shipment of All Steel Requirements

The need for steel and a call to the nearest Ryerson Plant—that's all it takes to start the smooth-flowing mechanism of Ryerson Steel-Service—a service designed to meet your steel needs as conveniently and as promptly as possible.

At Ryerson each step in the process of filling your order is geared to peak efficiency—carefully executed to eliminate every unnecessary delay between order desk and point of delivery. The most modern steel cutting and handling facilities meet your specifications quickly, with maximum precision.

The Ryerson system of one order—one invoice for a whole group of varied needs saves you time and detail work. And when the steel you need is not immediately available from stock experienced Ryerson engineers and metallurgists gladly assist you in the search for a practical alternate.

Ryerson Steel-Service is the cumulative result of more than a century of experience in the business of steel distribution. Whether your order is measured in pounds or tons, you are always assured of prompt personal attention. That's the reason so many buyers contact Ryerson for all steel-from-stock requirements.

JOSEPH T. RYERSON & SON, Inc., Steel-Service Plants at: New York, Boston, Philadelphia, Detroit, Cincinnati, Cleveland, Pittsburgh, Buffalo, Chicago, Milwaukee, St. Louis, Los Angeles.

RYERSON STEEL

Principal Products: Bars—Alloy & Carbon, Hot Rolled & Cold Finished • Structurals. Plates • Sheets • Tubing • Allegheny Stainless • Babbitt • Machinery & Tools, Etc.

Street Cleaning and Refuse Disposal

A Resume of Fill Practices

AN examination of fill practices for the disposal of garbage and refuse in four different cities discloses that they can dispose of the refuse for an operating cost of roughly 40 cents per ton. Only one of the four cities, however, actually weighs the material, which is essential for a thoroughly accurate figure on a weight basis. The method of covering the refuse varies among cities also. Some make a temporary cover of 3 to 6 inches and blanket the finished area with 18 inches of dirt, while others made a heavy cover as they go. Two of the cities use Bull Clams exclusively. One uses a set of Bull Clams with a dragline, and the last uses a dragline exclusively.

Results of Study

The cities studied are Louisville, Ky., whose disposal service is under the direction of J. B. Wilson, Director of Public Service; Dallas, Texas, where C. G. Brinkley, Superintendent of Sanitation, directs the work; Fort Worth, Texas, who has R. R. Lacy to supervise disposal operations; and Muscogee County, Ga., a suburban area of Columbus, Ga., where the work is under the direction of J. A. Willman, Public Health Engineer.

Louisville, Ky., has a single site for refuse disposal. One operator and a helper are all that are required for the fill operations. Weight calculations show that one ton of refuse occupies 1.22 cubic yards of space, and experience has shown under the Louisville operating conditions that the fills will settle 25% before being stabilized. Louisville has a unique protective operation—all fills are sprayed with crude carbolic acid, a residue from a gas manufacturing plant, to prevent, bugs, rats, and other nuisances. Director Wilson feels that while the method is effective, the fills so made should be restricted to parks and recreational areas.

Dallas, Texas, operates six fills, has one dump foreman and twenty-five men for personnel, three Bull Clams and one dragline for equipment. Superintendent Brinkley estimates that he must dispose annually of nearly 70,000 tons of garbage and more than 100,000 cubic yards of brush. He has no difficulty getting fill sites from people owning lowland, gravel pits, and similar areas. He estimates an operating cost of 43 cents per ton including the operation of a small animal incinerator.

Fort Worth, Texas, has three fill sites and uses one tractor operator and one helper at each. Tractor equipped Bull Clams are used here exclusively. Superintendent Lacy feels that a 2-cubic-yard Bull Clam will handle each day 500 cubic yards of loose refuse easily, with 800 cubic yards as the maximum. He places his operating cost at 43 cents per ton, based on refuse weighing 300 pounds per cubic yard. He feels that he can place 8,000 to 10,000 cubic yards of garbage in an acre of fill area. Both Fort Worth and Dallas make a light cover of the fill at the end of each day and make a final cover of 18 inches of dirt.

Columbus, Ga., or, more properly, the Muscogee County suburban area, operates on a much smaller scale, but has nonetheless an exceptionally clean and workmanlike fill. Public Health Engineer Willman uses a single tractor operator and one helper and complains only over the fact that he has not enough refuse to keep this crew busy continually. The only equipment involved is a tractor and Bull Clam. He disposes of 15,000 tons of refuse per year and covers each day's deposit promptly with 18 inches of dirt. He uses what he classifies as the "trench" method where he has a large shallow area to fill, and the "area" method when he is filling an old gravel pit. His costs have averaged 40 cents per ton.

A great deal of difference in opinion exists on the subject of what happens inside a sanitary fill. San Francisco investigated some of its fills and discovered virtually no decomposition. Specimens of fruits and vegetables appeared virtually as fresh as the day they were buried. H. C. Vensana, Director of Public Works, reports that tin cans were bright and free of rust. Odors of decomposition did exist, however, and temperatures were somewhat higher in the bottom of the test holes than in the top. M. J. McGruder, City Engineer, Lexington, Ky., reports that he has had whole areas fall away sufficiently so that a tractor would drop into them with the tops of the treads even with the ground surface. He attributes this to too great a concentration of garbage in one area and insufficient compaction.

Traveling Advertisements for Clean Streets

Ernest Jones, Commissioner, Department of Public Works, points to one of Detroit's new posters. One hundred recently purchased federal trucks equipped with Gar Wood bodies not only help keep Detroit's 4,200 miles of streets clean, but carry these posters to enlist public support of the clean-up program.

MUELLER

BRASS GOODS ARE AVAILABLE NOW FROM STOCK

As always, your Mueller Representative can give you full details and information on any of your Water Works Needs. Consult with him on all of your requirements or consult your Mueller "H" Water Works Catalog.

Yes, it's good news again—many MUELLER Brass Goods items such as Corporation Stops, Curb Stops, Branch Connections, Goosenecks, Compression Stops, Connections and Fittings can be shipped immediately from our stock!!! The same high quality, the same smooth, trouble free operating brass goods that have been the preference of the trade for 90 years, are yours again for the asking, so place your order now!

DEPENDABLE SINCE 1857 FULLY WARRANTED OUR 90th YEAR

MUELLER CO.

MAIN OFFICE AND FACTORY.....DECATUR, ILLINOIS
OTHER FACTORIES: *Los Angeles, Cal.; Chattanooga, Tenn.; Sarnia, Ont. Canada*

Sewerage and Sewage Treatment

Foul—But Do You Drink It?

IT IS foul, says Helena Huntington Smith in the September *Woman's Home Companion*, referring to the water in our rivers and streams, but we drink it. Before we do, she admits, we put it through a treatment process which is a modern miracle, so long as it works—but it does not always work.

In heaving anti-pollution brickbats, she tosses a few by implication at the water works industry. The water it furnishes certainly is not foul from a sanitary engineering standpoint. You can drink it in perfect safety.

We are amused, she says, by pictures showing medieval city dwellers dumping slops from second-story windows into the streets. We caution visitors to China against eating raw vegetables because the Chinese employ human excrement to fertilize their gardens. But we dump sewage into our rivers, then drink the rivers—or do you?

Miss Smith probably made enemies of numerous sanitary engineers when she came out solidly for federal legislation such as Senate bill 418 which cleared the Senate but got lost in the House during the closing days of Congress. She told the housewives of America that it was a particularly good piece of legislation because it has "teeth," that it would give the U. S. Public Health Service power to bring federal court action in case an offender persists in polluting an interstate stream.

Miss Smith strikes home when she points out that pollution is a tough civic problem . . . that city officials often ask why they should spend money to improve a river for somebody else downstream. But she urges her readers not to let this stand in the way, but to put the power of local civic organizations back of such an improvement.

If Miss Smith had taken one step further and told her readers that the vast majority of these problems could be met handily if the housewives of America would accept without comment an increase in their water rates varying between 100% to 150% she would have performed a real service. As has often been pointed out, sewage treatment is only a continuation of water supply and treatment, and such an increase would provide the funds to meet practically all the civic sewage works problems that trouble us today.

NO NEW TAXES

Your vote for the $5,000,000. anti-pollution Bond issue will:

1. **Bring clean waters again to Rhode Island.**
2. **Largely eliminate the menace to health caused by polluted waters.**
3. **Make Narragansett Bay the fisherman's paradise that it once was.**
4. **Reopen for bathing excellent beaches now closed because of pollution.**

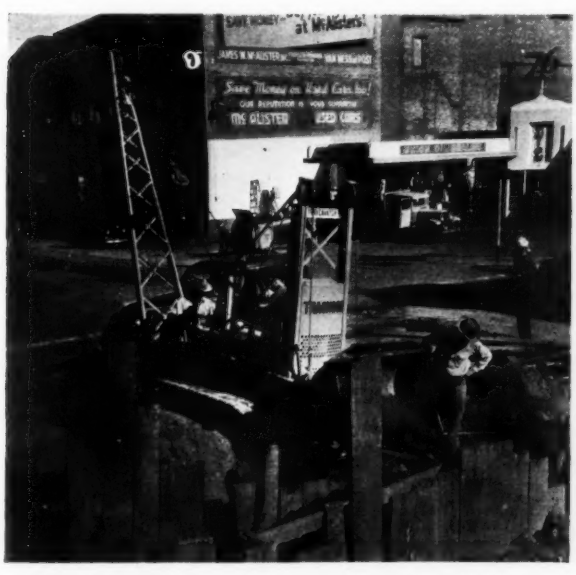
and last but not least:

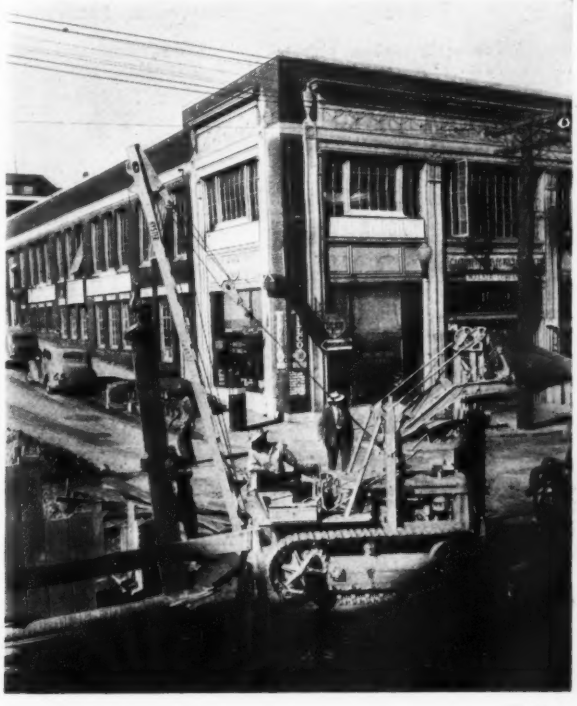
5. **"The bonds will be retired from revenue received from those parties using the sewers". Thus the improvement will be self liquidating — it will require —**

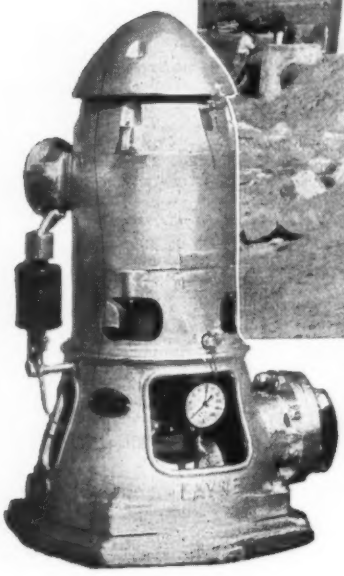
NO NEW TAXES

Rhode Island means business when it says that the pollution of Narragansett Bay has to stop—five million dollars' worth of business. But the state does not intend to add this sum to property taxes. It will be paid out of revenue from those using the sewer system.

Power front or rear—A Hyster crane and a Traxcavator shovel mounted on a Caterpillar D2 tractor make a smooth-running combination for sewer construction in San Francisco, Calif. Right: The crane eases sheet piling out of the ditch. Below: The bucket takes a turn at backfilling the ditch.







Serving the City of QUITO, ECUADOR

In Quito, Ecuador, almost astride the equator at an elevation of over 9 thousand feet, 5 Layne Well Water units are now producing 2,280,000 gallons of water per day. Highly pleased with the proven efficiency, low operating cost and outstanding quality, Quito's city officials have just ordered another 5 Layne Wells and Pumps for another section of the city.

Designed and installed by U.S. trained engineers, Quito's completed Well Water Supply will be equal in every way to the finest on the North American Continent.

Layne Well Water Systems are universally favored the world over. They are designed and built to give the utmost in long life and operating satisfaction. Layne has many such installations in the Latin American countries, all of which are fully measuring up to their reputation of high efficiency and low operating cost.

If your city, railroad, factory, packing plant, ice plant, or irrigation project is in need of more water where production cost per million gallons must be extremely low, you should have complete facts about Layne Well Water Systems and Layne Vertical Turbine Pumps. For Literature, address

pumps

For wells, lakes, rivers, reservoirs, irrigation—or for any use where large quantities of water must be produced at low cost. Sizes range from 40 to 16,000 gallons per minute. Write for Layne Pump Catalog.

LAYNE & BOWLER, INC.
General Offices, Memphis 8, Tennessee

LAYNE WELL WATER SYSTEMS
vertical turbine pumps

AFFILIATED COMPANIES—Layne-Arkansas Co., Stuttgart, Ark. ★ Layne-Atlantic Co., Norfolk, Va. ★ Layne-Central Co., Memphis, Tenn. Layne-Northern Co., Mishawaka, Ind. ★ Layne-Louisiana Co., Lake Charles, La. ★ Louisiana Well Co., Monroe, La. ★ Layne-New York Co., New York City ★ Layne-Northwest Co., Milwaukee, Wis. ★ Layne-Ohio Co., Columbus, Ohio ★ Layne-Pacific, Inc., Seattle, Wash. ★ Layne-Texas Co., Houston, Texas ★ Layne-Western Co., Kansas City ★ Layne-Western Co. of Minn., Minneapolis, Minn. ★ International Water Supply, Ltd., London, Ontario, Canada ★ Layne-Hispano Americana, S. A., Mexico, D. F.

Airports and Aviation

Fewer but Better Airports

THE eight western counties of western New York state need fewer but better airport facilities, a study by Kenneth K. Koontz, Airport Consultant for Niagara Frontier Planning Board, Buffalo, N. Y., discloses. At present there are fifty airports and four seaplane bases serving the combined needs of all eight counties. Many of the class I airports actually might be defined as landing strips having accessory facilities in varying degrees of fitness.

At present there are forty-five Class I, one Class II, one Class III, and two Class IV airports and four seaplane bases serving the 11 cities, 76 villages and 165 towns within the eight counties which had a combined 1940 population of 1,298,035 and a potential growth capacity over 1,500,000 ten years after the end of the war.

Postwar developments within this ten-year period will require thirty-seven municipally owned airports, together with as many other privately owned airports as private capital can develop. These will include twenty-four Class I, of which fourteen are existing and will be retained; seven Class II, of which six are now in use; three Class III, of which two are now in use, and three Class IV and V, with two now in operation.

The future growth in air traffic points to the need of a well defined pattern for airports, properly spaced, and adequately sized, to handle the ever growing air-traffic developments of the area. If aviation continues to develop as engineering studies of aviation operations indicate, the area will then need a minimum of fifty properly classed and adequately spaced airports.

Inter City-State Airport Dedicated

RECOGNITION of Bradley Field, state-owned and operated airport at Windsor Locks, Conn., as a joint air terminal for the Springfield, Mass., and Hartford, Conn., area was given by Springfield recently.

Springfield has been without air terminal facilities. Bradley Field lies midway between the two cities, being twelve miles from Springfield and thirteen from Hartford.

During the war $17,000,000 was spent on the two-thousand-acre airport, developed by the Army Air Forces on state-owned ground. Runways are a mile long and lighted, and I.L.S. has just been installed. All buildings are temporary Army construction.

A two-million-dollar appropriation by the Connecticut State Legislature will enable the State Aeronautics Commission to proceed with plans and construction of hangars and air terminal building.

A year ago, Future Springfield, Inc., a privately financed research group, published a survey urging the use of Bradley by Springfield and Hartford. They suggested the development of a Class H municipal field for the city.

Public recognition of Bradley in Springfield marks acceptance of the first phase of the research group's recommendations.

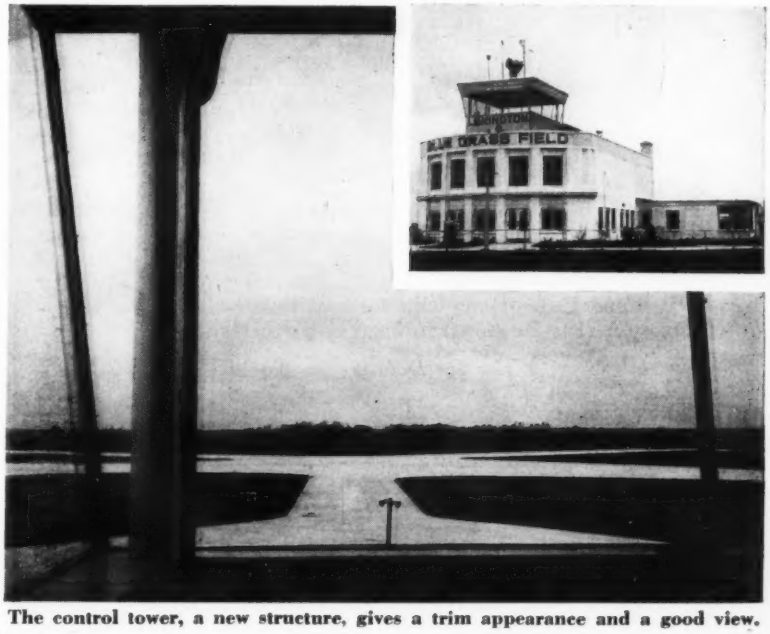
The field will be operated under the jurisdiction of the Connecticut State Aeronautics Commission of which Francis S. Murphy of Hartford is Chairman. Kenneth Ringrose is Director of Aeronautics for the Commission, and Colonel George P. Kane is airport manager of Bradley Field.

The Bluegrass Airport

ON a rise in the bluegrass flatland four miles outside the city of Lexington, Ky., lies a medium-sized efficient airport apparently surrounded by thoroughbred horses. There are two concrete runways, one 3,500 feet long and the other 4,000 feet in length. All are 150 feet wide. The runways were built in 1940 and 1941, and the trim terminal building was completed in 1946. Its Class III rating shows that it has ample capacity to handle those flights, both scheduled and non-scheduled, that use the terminal. At present, Eastern Air Lines and Delta Air Lines use it as a stopping point. However, many non-scheduled fliers also use it. Certain prominent business men who live in Lexington "commute" by air between Pittsburgh, Pa., and Lexington. Many farmers and horsebreeders in the area use the airport for their planes.

The trim lobby is strikingly decorated with a color design developed by a professor who heads the University of Kentucky Art Department. The wall panels are composed of U. S. Gypsum Acoustone which makes the lobby quiet, and as a result, the plane announcements are easily understood.

The airport is managed by P. G. Powell, former Navy flight instructor. Manager Powell discourages the idea of turnstiles for spectators at this airport. He wants the people of Lexington to feel that it is their airport and that they should feel welcome to come out and see what is going on at any time.



The control tower, a new structure, gives a trim appearance and a good view.

VIGILARM INSULATED TUBING

THE FIRE DETECTING ELEMENT

PROTECT CITY BUILDINGS
Against Fire

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WAREHOUSES • GARAGE • AIRPORT • POLICE AND FIRE STATIONS

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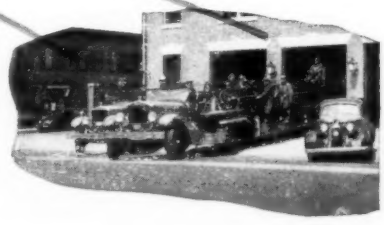
VIGILARM SYSTEM

AUTOMATICALLY DISCOVERS FIRE AND CALLS FIRE DEPARTMENT
Deriving Maximum Utility from existing Fire Defenses.

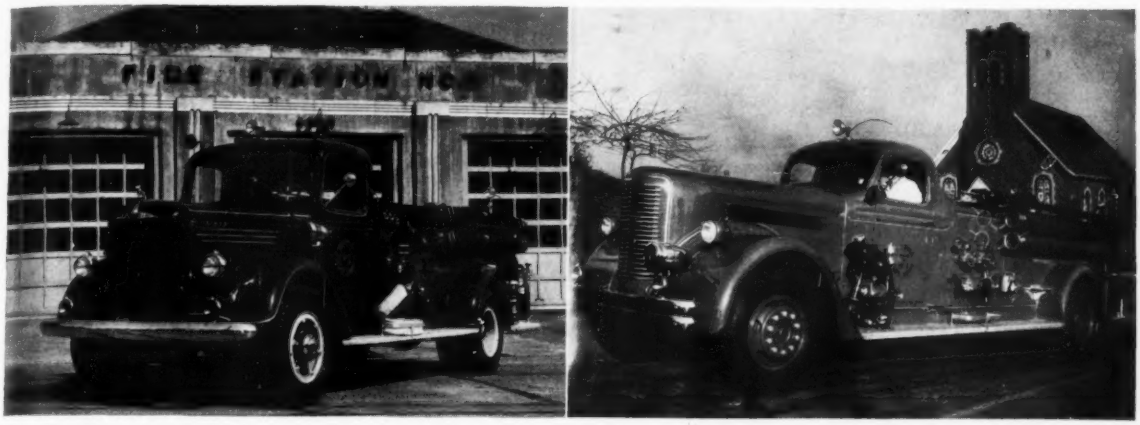
The Vigilarm System is of the Rate-of-Rise Type, operates in a matter of seconds following any sustained rise in temperature irrespective of prevailing room temperature, and hence, far faster than thermostats of fixed temperature types . . . It is of the Continuous Line Type and *protects every square foot of interior building area 24 Hours Daily.*



Plans and Estimates on this form of Relatively Inexpensive Protection Freely Supplied.
Write for Details

THE GAMEWELL COMPANY
NEWTON UPPER FALLS 64 MASSACHUSETTS

Public Safety



The Fire Department of Tacoma, Wash., is standardizing on Pirsch and Mack pumpers. Right: One of the four 1,000-gpm Pirsch pumpers recently purchased by the Department. Left: One of the five 1,000-gpm Macks received this spring.

Tacoma's New Record in Fire Equipment

THE RAPIDITY with which we have been ordering and installing new fire apparatus is unlike anything in the previous record of our department. From 1929 to 1947, we had purchased only four pumping engines, three of them in 1929 and one in 1944, all 1,000-gpm Macks.

In contrast, this year we received deliveries of 7 pumping engines, 4 Pirsch, and 3 Mack. We also have on order two 1,000-gpm Mack and one 1,250-gpm Pirsch pumpers, and four Pirsch aerial ladder trucks—two 100-foot, one 65-foot, and one 75-foot. When these arrive, we will have a total of:

13—1,000-gpm pumping engines (3 for reserve)
1—1,250-gpm pumping engine
2—500-gpm pumping engines
1—75-foot aerial ladder truck (for reserve)
1—aerial ladder truck

Additional Equipment

Another must for fire fighting is fog nozzles. We have four cellar fog nozzles, and on every pumper one 2½-inch nozzle, two 1½-inch, and one 1-inch.

All new apparatus will employ two-way radio, using Motorola equipment throughout. We are now installing a new transmitter to meet the FCC August 1946 requirements, using a 156.570-mc frequency. Our radio services both fire and police departments.

At present we have a total of 213 members in the fire department, which is enough to man 3 truck companies, 13 engine companies, and one fire boat. We work a two-platoon system, our working hours reduced to 63 2/5 per week. A graduate drill instructor keeps our men up to date with the latest fire-fighting and life-saving methods. Twenty-eight additional firemen and one battalion chief were added to our staff the first of the year.

We are now attempting to establish some new pumper and ladder companies throughout the city. Plans have been drawn up for four new fire stations; the property for one has already been purchased. It is hoped that in the near future, a modern headquarters will be erected on our present site.

C. J. EISENBACHER, *Chief*
Tacoma Fire Department
Tacoma, Wash.

Fire Station Design

WHEN our product—the Circul-Air Fire Hose Dryer—is used, it is an integral part of the fire station and to some extent has influenced the designs of these structures. Fire chiefs and architects often asked us for suggestions and ideas which could be helpful to them in developing a really modern, functional engine house. Many have commented on lack of reference material for prospective fire station builders.

To help fill this void, we have issued a 24-page pamphlet entitled *Fire Station Design*. In this brochure are discussed 18 different stations of various architectural types: traditional, colonial, Cape Cod, conventional, and modern. Spanish and other interesting types will be offered in another issue. In this pamphlet, the bungalow or one-floor design is emphasized. Sketches are shown by the following architects: Edgar T. P. Walker, 131 State St., Boston, Mass.; Heyward S. Singley, Columbia, S. C.; Randall Wagner, Kalamazoo, Mich.; S. Russ Minter, Cumberland, Md.; Weiler & Strang, Madison, Wis.; Steele, Sandham & Steele, Omaha, Neb.; Merrill C. Lee, Richmond, Va.; C. S. Buchart, York, Pa.; R. S. Richards, Auburn, N. Y.; Leo M. J. Dielmann, San Antonio, Texas; Nelson E. Bauzenberger, Collingswood, N. J.; Starrett and Van Vleck, New York, N. Y.; Maurice E. Walmer, Port Arthur, Texas; Ekstrand and Schad, Waukegan, Ill.; J. Warren McClesky, Pascagoula, Miss.; Reginald E. Marsh, 267 Fifth Ave., New York, N. Y.

This booklet is available free of charge to all municipal officials, fire chiefs, architects, or other parties interested in planning new fire structures.

C. T. MCGRAW, *President*
The Circul-Air Corporation
Detroit 2, Mich.

From Contractors & Engineers Monthly for July 1947.

Compaction of Soils Is Conference Subject

ARBA-Sponsored Two-Day Session At Buffalo Covers Practical Methods And Equipment for Soil Compaction; Vibration Is New Development

✦ SOIL compaction and the equipment with which to secure it in embankments, fills, and subgrades, were discussed at a recent conference in Buffalo, N. Y. The two-day meeting was sponsored by the American Road Builders' Association Committee on Compaction of Soils, and the Soils Section of the Joint Committee on Development of Highway Construction Equipment of the Highway Research Board and the ARBA. It was attended by 86 highway engineers, contractors, and equipment manufacturers.

Most interesting of the various sub-

BREAK PAVEMENT TAMP BACKFILL

The Low-Cost Way!

Compaction of soils has long been a source of grief and controversy among contractors and engineers.

RAPID PAVEMENT BREAKER MACHINES

have proved to be an answer to better compaction at a lower cost!

FASTER because three-foot layers can be tamped at one-time.

BREAK PAVEMENT—
DIG TRENCH—
LAY SUBSTRUCTURE—
BACKFILL—
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REPAVE WITHOUT ANY DELAY

All in same day!

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Write today for full particulars and information on other models.

R. P. B. CORP.

1517 Santa Fe Ave. Los Angeles 21, Calif.

Street Construction & Maintenance

Cincinnati's 1946 Record

DURING 1946, Cincinnati, Ohio, has awarded twenty-three contracts for highway improvement projects, including one grade-crossing elimination, one highway project relative to a grade-crossing elimination, and six major thoroughfare repaving projects.

Engineering services were also provided to the Metropolitan Housing Authority in connection with the development of the Veterans' Emergency Housing projects. Among other engineering activities, this involved a complete topographic survey of approximately one hundred acres.

Permits were issued for forty private-street improvements in connection with twenty-three new private subdivision developments. This involved considerable work in checking plans, preparing grade details, close supervision and inspection of street and sewer construction, and arranging for final acceptance of dedication.

Structures

The repaving with asphalt of the upper deck of the Western Hills Viaduct, which was started in 1945, was completed this year. Another major project was the complete replacement of the concrete deck on the Eighth Street Viaduct. New concrete decks were constructed on the 71st Street Bridge over Mill Creek, the Anthony Wayne Avenue Bridge over Mill Creek, and the Whittier Street Bridge over the C. L. & N. R. R. This work was done by the Highway Maintenance Division.

The painting of the Grandin Road Viaduct was completed and extensive Gunite repairs carried out to finish the rehabilitation of this structure. Painting operations on the steel superstructure of the Columbia Avenue Viaduct over Eggleston Avenue also were completed.

The Highway Maintenance Division cooperated with the Parkway Industrial Railroad in development of plans for the use of the Rapid Transit tubes and right-of-way for freight purposes. Engineering design and planning were continued on the Seventh Street Widening; the Eastern Avenue Grade Crossing Elimination at the Pennsylvania Railroad; the Sixth Street Viaduct Extension, and a project to construct approximately fifty axle-drag loading platform guards at various locations throughout the city.

W. R. KELLOGG
City Manager

In Cincinnati, a Kelly-Creswell spraying machine, using paint containing Prismo reflector beads, makes traffic division lines which can be seen at night.

Can Construction Costs Hold the Line?

THE Public Roads Administration thinks that they should, and the Associated General Contractors, meeting jointly with the American Association of State Highway Officials, think that they can, if designs are standardized and specifications liberalized, despite the fact that prices were higher in the first quarter of 1947 than in 1946.

In previous directives, Commissioner of Public Roads Thomas H. MacDonald summarized the Public Roads Administration's stand on construction prices by specifying that the general price level of federal-aid highway work for 1947 should not exceed that of 1946. The Joint Cooperative Committee of the American Association of State Highway Officials and the Associated General Contractors of America studied this price policy and reported its findings at a meeting held in Seattle recently. Dr. L. I. Hewes, Chief of PRA's Western Headquarters in San Francisco, indicated the Association's willingness to find a fair interpretation of the order but asked for wisdom and tolerance in its administration. He pointed out the lack of precedent for its administration on urban projects.

AGC's Vice-president Dwight W. Winkelman from Syracuse, N. Y., pointed out the two factors causing high prices last year were inefficiency of labor and interrupted progress of work caused by labor disputes, tie-ups, inability to procure labor, and inability to obtain a uniform flow of materials to the job. He found no great signs of marked improvement so far this year.

Specifically, he asked for standardization of box culvert headwalls, bridges, elimination of unnecessary rubbing of concrete, the use of machine-trimmed slopes, elimination of "gingerbread" on bridges.

AGC's President F. W. Parrott, Sioux City, Iowa, commended past accomplishments of the Joint Cooperative Committee — AASHO-AGC — and urged continued study to eliminate from highway plans, specifications, and methods those items that cost more than they are worth to the public.

Consequently, if construction costs fail to hold the line, engineers and contractors cannot be accused of contributing to this failure.

New Jersey Corrects State Aid Inequity

LEGISLATION passed in New Jersey's Assembly during 1946 and 1947 eliminates inequitable population restrictions on state aid for road and street improvements and provides an additional $2.5 million for municipal roads and streets. For example, this aid will apportion $237,434 for Newark, $163,016 for Jersey City, and $74,971 for Trenton.

Formerly, New Jersey's law limited state aid to cities having a population of 14,000 or less, thereby excluding from participation about 27 cities. Some 15 municipalities with populations in excess of 14,000 avoided the limitations, because they were not legally cities.

James A. Arnold, Jr., Research Associate, Princeton Surveys, pointed this out in a study of municipal road and street financing for New Jersey in a recent *New Jersey Municipalities* issue.

XUM

STOP RUST

This Sure, Simple Way

TEXACO *Rustproof Compound*, applied to exposed metal surfaces, effectively prevents rust. More than that — if rust has already started, *Texaco Rustproof Compound* penetrates it, loosens it for easy removal, and prevents any further rusting.

You simply brush *Texaco Rustproof Compound* on the metal you want protected. It forms a waterproof film, soft and self-healing against accidental scratches or breaks. It does not harden or chip off.

Texaco Rustproof Compound goes on easily and quickly and is easy to remove when your machines go back into service. It is one of the most economical methods of preventing rust.

Stop rust for sure this winter. Get *Texaco Rustproof Compound* and helpful suggestions for its use from the nearest of the more than 2500 Texaco distributing plants in the 48 States. Or write The Texas Company, 135 East 42nd Street, New York 17, New York.

EFFECTIVE PROTECTION FOR METAL EVERYWHERE — Use *Texaco Rustproof Compound* to protect your construction machinery. Gas holders, water works, sewage disposal plants, bridges — wherever metal is exposed to weather or corrosive chemicals and fumes — *Texaco Rustproof Compound* gives protection at low cost. Texaco's 36-page book "Rust Prevention" tells the whole story, offers many money-saving suggestions. Write for your copy today.

TEXACO

TEXACO Rustproofing Products

Tune in . . . TEXACO STAR THEATRE presents the TONY MARTIN SHOW every Sunday night. See newspaper for time and station.

Stop—Check and Mail

Please check over the list of interesting free catalogs on this and following pages. To obtain the literature you want, write direct to the manufacturers, or circle the identifying numbers on his coupon and mail it to The American City Magazine, 470 Fourth Ave., New York 16. We will see that catalogs are sent to you without expense or obligation.

9-47

14	15	16	17	18	19	20	21	22	23	24	25		
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Name ..... Position .....

Address .....

New Equipment for Sewer Cleaning

14 A new 36-page edition of the municipal-industrial catalog is being distributed now by Flexible Sewer-Rod Equipment Co., 9059 Venice Blvd., Los Angeles 34, Calif. The fully illustrated reference work lists and describes many new items in a full line of sewer and pipe cleaning tools, including the compact "Carry-All" trailer and improved "Flexible" Power Bucket machines. The latter equipment has a number of design advancements as well as added accessories. Full working instructions and index are important features of the catalog.

Glass Insulating Material Retains Properties Permanently

15 PC Foamglass, composed of tiny glass cells filled with sealed-in-air, is waterproof, verminproof, and fireproof; as a result it forms a permanent insulation. For free booklets describing this insulation in detail, write the Pittsburgh Corning Corp., Room 467, 632 Duquesne Way, Pittsburgh 22, Pa.

How to Light Sport Stadiums

16 Officials interested in the illumination of municipal sport stadiums are invited to write to the Crouse-Hinds Co., Syracuse 1, N. Y. Practical recommendations on the selection and arrangement of floodlights for the field may be obtained by sending drawings and details, which will be analyzed by Crouse-Hinds' illuminating engineers.

How to Apply Weed Killer

17 "How to Apply Weed Killer" is the title of Bulletin No. WK-148, which can be obtained from The C. B. Dolge Co., Westport, Conn. The folder shows the best way to apply weed killers and describes the equipment most useful for each type of lawn or turf.

Portable Power Saw

18 The Nordberg-Buday portable power saw can be adjusted for ripping, cross-cutting, or mitering within a few seconds simply by revolution of the circular table which operates in conjunction with the saw mechanism. For detailed specifications, write for Bulletin 132, Nordberg Mfg. Co., Milwaukee 7, Wis.

Caterpillar Issues New Folders

19 Bulletin 10184, describing the Caterpillar Diesel No. 12, and Bulletin 10186, on the No. 112 motor graders, about construction and operational features may be obtained by writing to the Caterpillar Tractor Co., Peoria 8, Ill. The folders are illustrated and include specifications of the graders, which attain 100 hp in the No. 12, and 70 hp in the No. 112.

Name Your Pump Requirements

20 What are your pumping problems? Do you have to pump from a ground water supply? Have you specialized problems such as those calling for high pressures at low volumes? Can you use centrifugal pumps, sewage pumps, or pumps that can handle sand and gravel? Is boiler feedwater pumping one of your problems? If so you will be helped by a new bulletin recently issued by Byron Jackson Co., Los Angeles 54, Calif., on the subject of centrifugal pumps. Write for Bulletin No. 46-8000.

One-Man Snow Loader

21 The Athey Force-Feed loader is a self-propelled, hydraulically operated loader that requires just one operator for the entire procedure of snow removal and is capable of loading up to 10 cubic yards per minute. For illustrations and price, write the Athey Products Corp., 5631 West 65th St., Chicago 38, Ill.

Deep-Well Turbine Pumps

22 Aurora centrifugal pumps are available in either oil or water lubricated units; the company's Apco turbine-type pumps, for capacities up to 150 gpm, can handle non-lubricating liquids. Write for condensed catalog "M." Aurora Pump Co., 66 Loucks St., Aurora, Ill.

Clean Water Mains 3 to 24 Inches in Diameter

23 Write to the Pittsburgh Pipe Cleaner Co., 133 Dahlem St., Pittsburgh 6, Pa., for details on the Pittsburgh-Eric pipe reconditioning program. By this process, water mains are cleaned thoroughly and then lined with bitumen.

Keeping Records Can Be Easy

24 The Kardex system of record keeping gives your department's filing system a highly efficient method of filing, and finding what has been filed. For details, write Remington Rand, Systems Division, 315 Fourth Ave., New York 10, N. Y.

Street Lights for Smaller Cities

25 The Joslyn Mfg. and Supply Co., 20 North Wacker Drive, Chicago 6, Ill., produces a luminaire that is particularly adaptable for use in the small community. The Utilux, type K, has a sealed-in reflecting surface, cast-aluminum housing, cushioned mounting, and a cast-aluminum head with either inner or outer wiring and pipe-thread or clamp mounting. Write for additional data.

A Water Works Painting Guide

26 Don't let the problems of corrosion stand in the way of keeping your water works plant in spick-and-span condition. To help you keep your water plant painted neatly and to cut down on annoying maintenance problems, write to Inertol Co., Inc., 470 Frelinghuysen Ave., Newark 5, N. J., and ask for its new folder entitled "Painting Guide for Water Works."

Parking Meter Surveys

27 For information about the Mark-Time service of surveying your municipality's metered-parking requirements in cooperation with your traffic-control officials, write M. H. Rhodes, Inc., Hartford 6, Conn.

Remove Rubbish or Snow With One Sweeper

28 The Little Giant Power Sweeper may be obtained with brush lengths of 5, 6, 7, 8, and 9 feet, the 5-foot brush being particularly useful for brushing snow off sidewalks. Operating from power take-off, the brush operates at a 30 degree angle, sweeping to the right of the tractor away from the wheel path. For complete information, write Little Giants Products, Inc., 1585 N. Adams St., Peoria 2, Ill.

Crawler Track Lubrication

29 Issue No. 6 of *Lubrication* contains an article entitled "Crawler Track Lubrication and Maintenance," which gives a comprehensive analysis of the problems and solutions that are encountered. For a free copy of this issue, write to The Texas Co., 135 East 42nd St., New York 17, N. Y.

Salvage Pipes by Cleaning

30 If the pipes of your water system are clean, your municipality receives added service and has lower maintenance costs. For details on quick pipe-cleaning with a minimum interruption of service, write to the National Water Main Cleaning Co., 50 Church St., New York 7, N. Y.

Air Compressors with 60- to 500-Cubic-Foot Capacity

31 "Air Plus" compressors are available with capacities ranging from 60 to 500 cubic feet. Powered by Continental, Caterpillar, and International engines, the machines are constructed to produce a high volume of air per pound of fuel used. Catalog JC-5 gives all the details; write The Jaeger Machine Co., Columbus 16, Ohio.

(*Continued on Page 22*)

Stop—Check and Mail

Use Coupon on Page 21

Rubbish Cans on a Major Scale

32 The Dumpster is a detachable truck body which is built in the form of rubbish depositories which are placed at needed points in the busy sections of the municipality. Then, a truck-hoisting unit makes collection rounds, picking up each loaded body, hauling it to the dump area, and then returning the body to its site in the city. For additional details, write Dempster Brothers, Inc., 387 Springdale, Knoxville 17, Tenn.

Double Lid Covers Protect Meters from Frost

33 The double-lid meter box covers on Ford meters protect meters from loss of operation from freezing. The result is accurate readings regardless of the weather. A catalog is available from The Ford Meter Box Co., Inc., Wabash, Ind.

Trolley Coaches— A Comfortable Economy

34 The trolley coach, a rubber-tired bus that receives its power from overhead electric lines, has proved economical to operate, comfortable enough for the passenger to induce increased patronage, easily maneuverable in traffic, silent, speedy, and safe. For literature, write the Ohio Brass Co., Mansfield, Ohio.

Weather-Proof Lanterns

35 The Embury Air Pilot Lantern remains lighted despite weather and wind. It is particularly useful as warning signals on municipal construction work. For details, write the Embury Mfg. Co., Warsaw, N. Y.

Snow Plows Keep Traffic Moving

36 Efficient snow removal is important not only in preventing accidents but in keeping traffic moving. The Baker plows, available in reversible wheel-tractor models, have hydraulic controls and sectional tripping blades. They may be obtained for mounting on trucks, motor graders, wheel tractors, and truck-type tractors. For data, write to the Baker Mfg. Co., Springfield, Ill.

Install Underground Pipe Without Breaking Pavement

37 The Hydrauger bores underground holes from 2½ inches to 14½ inches in diameter, without requiring expensive pavement breaking. Especially useful for work in highly populated areas, the machines may be obtained in models that develop up to 5.2 hp on 90 psi air. For illustrated catalog, write the Hydrauger Corp., Ltd., 116 New Montgomery St., San Francisco 5, Calif.

Fire Trucks with 750-To 1,500-gpm Capacity

38 Built with engines up to 240 bhp, Oren Roanoke triple and quadruple fire trucks are available with seven-man closed and canopy cab, three-man closed, open, semi-, and sedan cab. The apparatus is capable of delivering from 750 to 1,500 gpm, and comes with a large booster tank. For specifications, write the Oren Roanoke Corp., Roanoke 16, Va.

Self-Feeding Spreader Stops Icy Street Troubles

39 The Flink Ice-Control unit spreads sand, cinders, or other granular materials, may be attached to any dump truck, and can be used for resurfacing, seal coating, dust control, and roadwork—all in addition to being an efficient ice-control unit. Write for literature to the Flink Co., Dept. AC, Streator, Ill.

How to Get Clean Water Pipes

40 The Tate process, operated by Tate Pipe Linings, Inc., 849 E. Lime Ave., Monrovia, Calif., consists of three stages: cutting of incrustation, cleaning, and then cement lining of the pipe. For details of procedure, and information on how pipes may be restored to their original service rendering, write for a free bulletin.

The Motor-Paver for City Street Works

41 For resurfacing secondary roads and city streets as well as for new construction, the Motor-Paver, manufactured by Hetherington & Berner, Inc., 730 Kentucky Ave., Indianapolis 7, Ind., has proved highly efficient. The machine is a self-contained unit which does the entire mixing and laying job in a single continuous operation. Write for additional information.

Pump Auxiliary for Fire-fighting Equipment

42 The Porto-Pump can serve either as an auxiliary piece of apparatus for larger fire departments, or as an almost complete unit for small municipalities. It consists of a high-pressure, independently powered, demountable pump; a hose, ladder, an axe, an extinguisher, extra nozzles, and hydrant adapters. The unit can be attached to any vehicle and may be towed by hand where necessary. For information, write Porto-Pump, Inc., 227 Iron St., Detroit 7, Mich.

Low Center of Gravity Decreases Breakdown on Street Flushers

43 Standard Steel Works Model 7 street flusher is constructed throughout of high-tensile steel, reducing corrosion and weight and increasing tensile strength. The low center of gravity is obtained from longitudinal sills which distribute the weight along the entire truck chassis. The pump provides a minimum of 50-pound cleaning pressure with three Flusher Nozzles open. Write to the Standard Steel Works, North Kansas City 16, Mo., for additional information.

Savings on Snow Plows

44 American Motors, Inc., 250 Park Ave., New York 17, N. Y., is offering unassembled snow plows designed for installation on Ford and Chevrolet trucks, and spare parts, at appreciable savings. Included are Vickers hydraulic valves, V-blades, wings, finished shoes, and similar fittings.

Tar and Bituminous Concrete Build Long-Wearing Roads

45 Tarvia road tar and Tarvia-lithic bituminous concrete form a road top that yields good resistance to surface-wearing traffic. Also manufactured by The Barrett Division, Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y., are wood preservatives for guard rails and bridges, protective coatings for culverts and underground pipe, and waterproofing for viaducts and tunnels.

Glass-Enclosed Bed For Sewage Sludge Drying

46 A set of five engineering data folders covering glass-enclosed sludge beds has been issued by Lord & Burnham, Division of Burnham Corp., Irvington, N. Y. Ask for 130-B, 138-B, 148-B, 159-B, and 180-B.

Reflectorizing Signs in Place

47 The Prismo Safety Corp., Huntingdon, Pa., will send you Bulletin No. 547, which describes in detail the Prismo method of reflectorizing. By utilizing this means of renewing the visibility of signs, signs need not be removed from site.

Vertical Turbine Pumps For Ground Supplies

48 Wherever ground-water supplies are concerned, Layne and Bowler, Inc., Memphis 8, Tenn., has literature and other information that will be helpful. Write to this organization telling of your own ground-water problems.

These Parking Meters Emphasize Dependability

49 Karpark Automatics are constructed to give accurate metering unaffected by either extreme heat or cold. Available in combinations to meet your city's parking needs, the traffic meter operates automatically. For information, write the Karpark Corp., Cincinnati 6, Ohio.

Sewers Cleaned from Street Level

50 With the OK Champion power sewer cleaner, all operators work at ground level; the lines are cleaned in place, with roots, dirt, and other debris removed from the main in one continuous operation. Complete details are available from the Champion Corp., 4716 Sheffield, Hammond, Ind.

New Test Plug for Testing Water and Gas Mains

51 The Test Plug Mfg. Co., Skokie, Ill., will send you a circular describing its new plug for testing mains carrying water, gas, or air, without using valves and eliminating open trenches. The plug withstands 300 pounds hydrostatic pressure, and the same clamps fit many sizes of pipe.

Take the Smell Out Of Refuse Dumps

52 Don't let odors from refuse dumps, incinerators, or other similar places become a nuisance and subject your city to possible damage suits. O. D. 30, manufactured by Wonder Wash Corp., 60 East 42nd St., New York 17, N. Y., is an odorless deodorizer that kills any and all types of odors, regardless of the source. Information and free samples may be obtained from the manufacturer.

Haul Heavy Equipment Quickly and Easily

53 Martin Carryhaul Trailers are built with a low center of gravity to facilitate loading and prevent tipping and consequently make moving your heavy tractors, bulldozers, and shovels as easy as driving a truck. For information about the sizes available, write the Martin Machine Co., Kewanee, Ill.

Diesel Engines

54 Catalog No. 11, distributed by the Witte Engine Works, Division of Oil Well Supply Co., United States Steel Corp. Subsidiary, Kansas City 3, Mo., describes the products and services the company offers. Powering such diverse kinds of equipment as air compressors, pumps, and various municipally rendered services, the Witte diesel has a four-stroke cycle.

(Continued on Page 23)

Stop—Check and Mail

Use Coupon on Page 21

Choose a Meter To Suit the Climate

55 The Badger A-IOT meter is designed specifically for cold climates—made of a frost-proof design with breakable bottom plates attached to the main housing by heavy stud bolts; model SG-IOT is a split-case meter for warmer climates where there is no possibility of freezing. On both, the gear trains are oil-enclosed. For specifications, write the Badger Meter Mfg. Co., Milwaukee 10, Wis.

Vacuum Loader For Cleaner Streets

56 The Vacuum Loader handles wet or dry leaves, papers, and small debris at the curb, as well as taking care of catch-basins before they are completely filled. For data, write M. A. Elliotte, Sales Manager, Leaf Loader Div., American Structural Steel and Tank Co., 928 Virginia Park, Detroit 2, Mich.

Valves for Immediate Delivery

57 The Ludlow Valve Mfg. Co., Inc., Troy, N. Y., can give you immediate shipment of hub end valves, double gate, A. W. W. A. specifications from 2 inch to 12 inch. Ludlow also manufactures larger-size valves, hydrants, and disc gate valves. Detailed information may be obtained by writing.

Pure Water That Tastes Good

58 Water, to be considered "good," must not only be chemically free of impurities, but should be free of unpleasant odors and tastes. The Mathieson Alkali Works (Inc.), 60 East 42nd Street, New York 17, N. Y., will send you information on its method of chlorine dioxide treatment.

Street Lighting

59 The Utility Lamp Div., McHugh Products, 728 Atlantic Ave., Brooklyn 17, N. Y., manufactures street lights which give glare-proof illumination and long service. These lights have been found efficient for varying road and street conditions. Write for further information and illustrations.

Parking Meters

60 Few working parts, accuracy in allotting time per coin fed to the machine, and low initial and maintenance cost are the three features that make Mi-Co parking meters worthy of your immediate investigation. Write Mi-Co Meters, 231 Court St., Covington, Ky.

Municipal Surveys

61 C. T. Gilliam & Assoc., 6311 North Figueroa St., Los Angeles 42, Calif., will send you information about its survey service in the fields of water department operation, street light operations, budget control and forecasting, tax rates, appraisals, and evaluations, garbage disposal, planning, and all other phases of municipal government operation. A survey in time can be a highly economic expenditure.

No Unnecessary Digging With This Pipe Finder

62 The M-Scope, which locates buried pipe, cable, and water and oil leaks, eliminates unnecessary digging and saves a substantial number of man-hours of labor. Manipulated by a single operator, the mechanism locates underground pipe and leaks by magnified sound vibrations. For a free booklet, write Fisher Research Laboratory, Inc., 1961 University Ave., Palo Alto, Calif.

Three- to Four-Ton Tandem Roller

63 The Wheeler Tandem Roller Division of Shaw Sales & Service Co., 5102 Anaheim-Telegraph Rd., Los Angeles, Calif., will send its catalog describing the close-compacting qualities and easy maneuverability of this company's 3- to 4-ton roller. The Wheeler provides a clearance of 10 inches from ground to frame, and the wide front and rear rollers permit compacting close to forms and sidewalls.

Handy Electric Power Set

64 An extremely useful tool in many city operations is the small electric portable power plant. Driven by gasoline engines, these Onan plants are built for both A. C. and D. C., in capacities from 350 to 35,000 watts. For information about their use by fire, park, and airport departments, write D. W. Onan & Sons, Inc., Minneapolis, Minn.

Automatic Equipment For Water, Steam Control

65 Liquid level controllers, diaphragm valves, strainers, pressure reducing and and regulating valves, pump governors, and steam plant equipment, such as back pressure valves, atmospheric relief valves, diaphragm relief valves, oil and grease extractors, and exhaust heads, all receive thorough discussion in a new 100-page catalog just released by Kieley and Mueller, Inc., North Bergen, N. J. The book, called Catalog #47, is designed as a working tool for the water-works- and steam-engineer in power plant operation. The booklet is ring-bound to open flat and is 8½ by 11 inches.

Copper Pipe and Fittings Resist Corrosion

66 Copper pipe and fittings have been found particularly valuable because of their resistance to corrosion. Types of copper fittings, with suggested methods of installation, and data on the type of material best suited for each type of water are included in a recently issued bulletin by the Streamline Pipe and Fittings Division of the Mueller Brass Co., Port Huron, Mich.

Snow Loader Reduces Cost And Increases Efficiency

67 A snow loader that can quickly clear the streets of snow is not only a necessity, but an economy. For statistics and information on the Haiss Snow Loader, which can average a loading rate of 10 cubic yards per minute, write the George Haiss Mfg. Co., 140th St. and Park Ave., New York 51, N. Y.

Comprehensive Metering Study

68 The Neptune Meter Co., 50 West 50th St., New York 20, N. Y., will send you upon request *An Outline of Water Meter Practice*, a comprehensive study of metering methods and procedures. There is no charge for this booklet.

Light Up-Right Scaffolds Made of Aluminum Alloy

69 Up-Right Scaffolds are aluminum alloy scaffolds which can be erected in one minute per section. They have no loose parts, they will level and adjust their height instantly, and each section folds flat. Illustrated printed matter can be secured from the Up-Right Scaffold Co., 612 Bank of America Bldg., Berkeley 4, Calif.

A Finishing Machine For City Pavements

70 Here is a small, portable finishing machine intended specifically for municipal needs. The Model SC200, for slabs up to 16 feet wide, and the Model SC202 for slabs over 16 feet, employ a screed that undercuts at the side forms, rolls back for second pass, has both regular and inverted strike-off crowns, and permits the operator to work from the front, sides, or rear. For information about this paver, that makes it possible for the operator to place 65 cubic yards of concrete in an hour, write the Electric Tamper & Equipment Co., Ludington, Mich.

Modern Business Methods Apply to Municipalities

71 The time-saving and error-reducing methods that business uses may be adapted profitably by municipal departments. The Burroughs Adding Machine Co., 6071 Second Blvd., Detroit 32, Mich., will send you information about its line of business machines for any type of mathematical computation.

Flexible Fire Hose

72 BWH hose is flexible, for easy storing between calls to duty, and is covered with a woven cotton jacket for strength and durability. Manufactured by the Boston Woven Hose and Rubber Co., the products are distributed by The General Detroit Corp., 2270 E. Jefferson, Detroit 7, Mich., and by the West Coast Subsidiary, The General Pacific Corp., E. Washington Blvd. and Hooper Ave., Los Angeles, Calif. Information about General Detroit's line of fire extinguishers and motor fire apparatus may also be obtained.

Two-Way Radiotelephone For Municipal Departments

73 The two-way FM radiotelephone has already been employed in many municipal departments—fire, police, emergency. Ability to contact headquarters quickly for instructions is a time-saver of the utmost importance in saving of life and property. Write for information to Motorola, Inc., Communications and Electronics Div., Chicago 51, Ill.

Can You Use An Arc Welder?

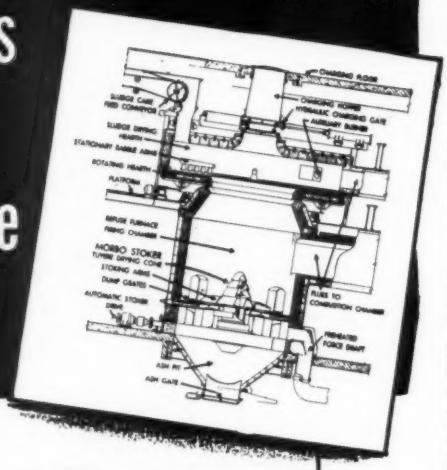
74 Hobart electric-powered arc welders include AC Transformer types; motor-generator sets DC type in sizes from 150 to 600 amperes, and DC type generators for connecting to your own power unit, in sizes from 150 to 400 amperes. The multi-range dual control permits selectivity of the combination of current and open-circuit voltage. Also available are gasoline-engine-powered units. For specifications, write Hobart Brothers Co., Box DM-747, Troy, Ohio.

New Equipment for Sewage Treatment

75 Six new units for the treatment of sewage are described in the latest bulletin issued by The Dorr Co., 570 Lexington Ave., New York 22, N. Y.; the S-7 Clarifier for sedimentation tanks of from 30 to 100 feet in diameter; the Duo-Clarifier for simultaneous primary and secondary settling; the Dorrco Duo-Filter, which, in conjunction with the Dorr Duo-Clarifier, results in a Biofiltration plant; the Dorr Digester, Type M, with propeller-type mechanical mixers operating in vertical draft tubes; an external sludge heater; and the Dorrco Sulzer Screenings Disintegrator.

(*Continued on Page 24*)

Destructors for Combustible Wastes



Buy MORSE BOULGER

and you buy . . .

1 — GREATER SELECTIVITY
2 — MODERN DESTRUCTORS
3 — LONGER EXPERIENCE
4 — FULL GUARANTEE

THE progressive, sanitary-minded community will not tolerate open dumps or even ineffective, offensive waste disposal plants. It does want and will approve a unit of modern design and construction that will destroy garbage, trash, sewage sludges, institutional wastes and hospital organic matter without producing offensive smoke or odor.

We are interested in serving such communities because we have much to offer in the way of destructors. There's a Morse Boulger design capable of handling any combination of combustible wastes. Our units are *guaranteed* to give satisfactory results. Our field men stay with the job until it is operating 100% and instruct the crews so that they can carry on. Back of this service is 60 years' experience in the field of incineration.

Discussion of your problem and plans places you under no obligation. If there isn't a Morse Boulger representative near you, write us here in New York.

Morse Boulger Destructors include:

1. **Mechanically Stoked Incinerator, Bulletin 111**
2. **Cell and Hearth Type Incinerator, Bulletin 110**
3. **Rotary Hearth and Stoker Incinerator, Bulletin 111 (illustrated)**
4. **Multi-Zone Furnace, Bulletin 114**

MORSE BOULGER DESTRUCTOR COMPANY

205-R East 42nd Street **New York 17, N. Y.**

Representatives in Principal Cities

Use Coupon on Page 21

Water and Sewage Treatment Equipment

76 Catalog 775 A, distributed by The Jeffrey Mfg. Co., 970-99 North 4th St., Columbus 16, Ohio, describes the company's complete line of equipment, with photographs and drawings. Included are bar and disc screens, screenings, grinders, grit collectors and washers, sludge collectors for primary and final settling tanks and sludge elevators, controls for flocculation, equipment for biofiltration plants, conveyors, elevators, and transmission machinery.

Insect Pest Control With Fog Applicator

77 TIFA, Todd Insecticidal Fog Applicator, spreads insecticides, fungicides, repellents, or hormones in a fog that spreads quickly over a wide area and permeates thoroughly. The mechanism is easily handled by a single operator and may be used advantageously on garbage or refuse dumps and beaches, parks and swamps. Write for illustrated folder to the Combustion Equipment Div., Todd Shipyards Corp., 81-16 45th Ave., Elmhurst, Queens, N. Y.

Standard Production-Built Airport Buildings

78 The Luria Engineering Corp., 500 Fifth Ave., New York 18, N. Y., is prepared to make surveys, essential for a profitably operated airport, to submit cost estimates and recommendations for immediate needs and allowing for future expansion, and to prepare final designs and construct the entire airport. For details, and illustrations of the company's standard production built hangars and administration buildings, write the company.

Cement Waterproofing With Miscible Base

79 Ranetite, a cement waterproofing, has a wax base which has been emulsified to be miscible with water. Mixed with water and applied with a trowel, Ranetite may be used on the inside or outside of buildings, preventing dampness within, and cracking or deterioration without. For information about Ranetite, Model No. VVV, write the Ranetite Mfg. Co., 1917 S. Broadway, St. Louis, Mo.

Sewer Cleaning Equipment

80 The Expanding Sewer Machine Co., Nappanee, Ind., will send you its catalog describing the company's line of sewer-line equipment, including a description of the Sure Grip sewer rod and accessories, which form a rigid chain that will float, and may be coupled or uncoupled out on the street.

Market Research

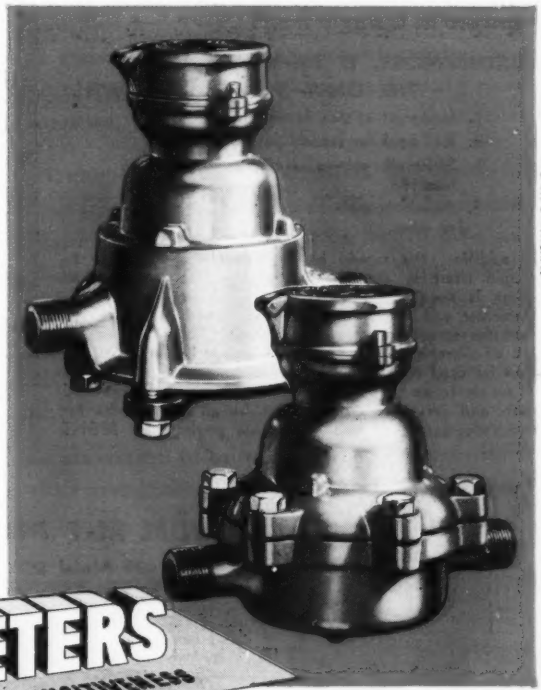
81 Foster D. Snell, Inc., 29 W. 15th St., New York 11, N. Y., Consulting Chemists and Engineers, has issued a booklet, *Market Research*, which outlines the organization's facilities and methods for conducting various types of research surveys in all chemical product fields, including market analysis, forecasting, and planning.

Asbestos-Cement Pipe for Sewage Disposal Lines

82 Bulletin No. TR-58A describes the use of Johns-Manville's Transite pipe, an asbestos-cement product, for sewage-disposal lines from buildings to street sewers or septic tanks. Also described is the Taper-Tite coupling, a packaged joint which does not require the use of hot jointing materials. Write to Johns-Manville, Box 290, New York 16, N. Y.

(*Continued on Page 26*)

"Badger took our water utility out of the 'red' and into the money column"



. . . "did this in a year's time," writes a midwest city official. "We are still using Badger Meters . . . a very worthy product, honestly made, honestly priced, and we have found your company to be more than willing to help us with any water utility problem."

In over 5,000 communities, waterworks men know "It pays to BUY BADGER."

BADGER METER MFG. CO., MILWAUKEE 10, WIS.

BADGER Water METERS

ACCURACY · LOW COST MAINTENANCE · DURABILITY · SENSITIVENESS

BRANCH OFFICES:

NEW YORK CITY • PHILADELPHIA • WORCESTER, MASS.
SAVANNAH, GA. • CINCINNATI • CHICAGO • KANSAS CITY, MO.
WACO, TEX. • SALT LAKE CITY, UTAH • PORTLAND, ORE. • SEATTLE, WASH. • LOS ANGELES

JACKSON MUNICIPAL PAVING UNIT

Knocks the Socks off PAVING COSTS!

This revolutionary new development in Municipal Paving Units has definitely proved that it can place perfectly upwards of 65 cubic yards of concrete in a single hour!

FURTHERMORE, IT EMPLOYS THE ONLY SCREED THAT WILL:

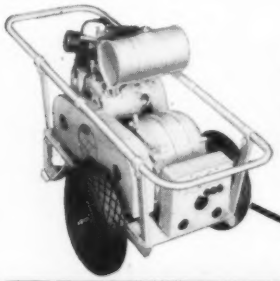
1. Undercut at side forms,
2. Roll back for second pass.
3. Strike-off crowns, both regular and inverted.
4. Permit operators to work from front, rear or sides.

In addition, the screed has such a strong tendency to propel itself in the forward direction that only small effort is necessary to strike-off stiff mixes of concrete. Manholes and storm sewers are no handicap due to the fact the screed does not reciprocate. Does an excellent job of vibrating concrete in slab depths up to 10 inches. Can be used to great advantage on any slab width from 6' on up to any practicable width. For radically reduced costs and far greater production, by all means write for complete details of this remarkable paving unit RIGHT NOW!

The COMPLETE UNIT CONSISTS OF:

1 The Model SC200 Screed (for slabs up to 16' wide) or Model SC202 (for slab widths from 16' and up) — activated by the famous JACKSON Vibratory motor. Light weight, easily transported — quickly converted from one slab width to another.

2 One of our famous Portable Power Plants which provide a wide range of vibratory frequencies thus assuring perfect placement of any concrete mix usually specified. These husky plants are Wisconsin engine powered and have permanent magnet generators which require no adjustment or maintenance.



MODEL M-1 POWER PLANT

furnished with Model SC200 Screed. Capacity: 1.25 K.V.A. Generates both single phase and 3-phase 110 Volt 60 Cycle AC. Also ideal for operating lights, vibrators and powers tools.

ELECTRIC TAMPER & EQUIPMENT CO.
LUDINGTON MICHIGAN

Check and Mail

Use Coupon on Page 21

Septic Tank Cleaning

83 The Odorless Sanitary Cleaner—O.S.C.—is a modern, quick, and sanitary method of cleaning septic tanks. The O.S.C. can be used for emergency fire fighting, sprinkling, or dewatering flooded basements, and therefore, it is an economical piece of equipment for municipal departments. Equipped with a self-priming sewage pump, the apparatus is shipped ready to mount on a truck chassis of from 158 to 161 inches. Write for Bulletin 7-ST-11, The Gorman-Rupp Co., 343 N. Bowman St., Mansfield, Ohio.

Locate Underground Leaks By "Remote Control"

84 The Geophone picks up the sound of leaking water or steam when the sound is as far away as 50 to 75 feet. Then, within a few minutes, the operator knows the exact location—without any unnecessary excavation. For information about the Geophone, as well as pipe phones, pipe finders, and dipping needles, write the Globe Mfg. Corp., Reading, Mass., Dept. Y.

Electrical Equipment for Sewage Treatment Plants

85 The Apparatus Department of General Electric Co., Schenectady 5, N. Y., has issued a catalog entitled *Complete Coordinated Electric Equipment for Sewage Treatment Plants,* which gives detailed information about the types, sizes, and specific applications of various pieces of equipment for use in each phase of sewage treatment.

Garbage Dumps Rehabilitated With a One-Man Crew

86 The Oliver Cletrac crawler tractor, equipped with a Drott Bull Clam, is operated by one man, and is an ideal machine for sanitary fill work—it packs the refuse, covers it, and levels it. It can dig trenches preparatory to dumping garbage. For information, write The Oliver Corp., Industrial Div., 19300 Euclid Ave., Cleveland, Ohio.

Power Mower Adaptable for Other Uses

87 The new M-B power grader has attachments that equip it as a scarifier, snow plow, bulldozer. Hydraulic power direct on the moldboard gives maximum blade pressure in handling all types of maintenance at speeds of 2 to 16 miles per hour. For information about this machine, which is powered by a 40-hp International Tractor, write the Meili-Blumberg Corp., Box A-8, New Holstein, Wis.

Chain Link Fence Gives Businesslike Protection

88 Realock chain link fence offers protection against trespassers over long periods —it is durable, strong, and impregnable. For catalog, or information on the company's service of free estimates of the cost of erecting Realock chain link fence, write Fence Dept., Wickwire Spencer Steel Division, 361 Delaware Ave., Buffalo 2, N. Y.

"Evidence on America's Fatal Streets"

89 Written by leading authorities on traffic safety, *Evidence on America's Fatal Streets* contains information about the most prevalent cause of traffic accidents with actual case histories, and describes how many towns and cities have improved traffic regulation and cut down accidents. For a free copy, write The Street & Traffic Safety Lighting Bureau, 155 E. 44th St., New York 17, N. Y.

(*Continued on Page* 28)

A TERRIFIC TEAM...

BAKER Bulldozer...ALLIS-CHALMERS HD-5

Baker Gradebuilder and the Allis-Chalmers HD-5 make quick work of tearing out tree trunks in clearing land!

BAKER MFG. CO. • Springfield, Ill.

BAKER

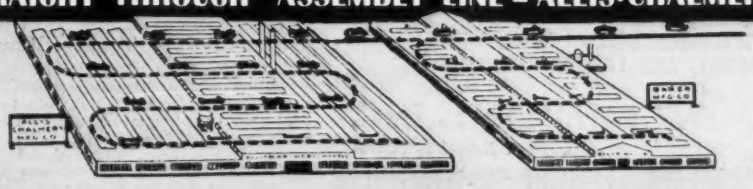
They Go Together! BAKER A-C

The hard-hitting, smooth-performing team of a Baker Bulldozer and the new, speedy Allis-Chalmers HD-5 tractor provides earth movers another in a long line of tough, hard working bulldozing combinations.

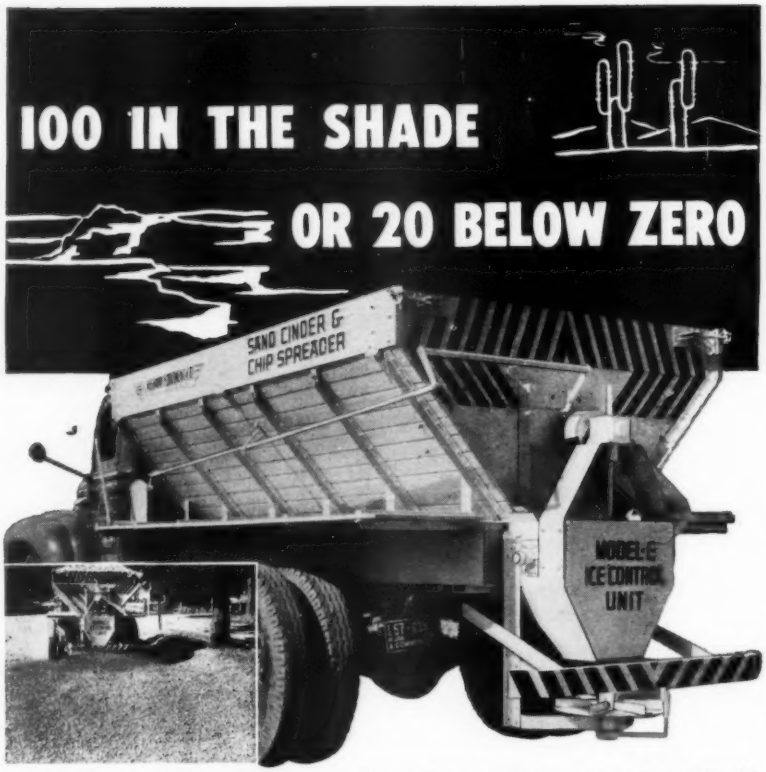
Small, rugged and highly efficient, this powerful bulldozer-tractor combination is designed and constructed to handle a large variety of jobs and materials speedily and economically. Such built-in features as direct down pressure, less linkage, low pressure hydraulic system and fast, sensitive blade control assures dependable performance at all times.

For the maximum in output, for the greatest return on your investment, specify Baker Bulldozers and Gradebuilders, on your Allis-Chalmers tractor.

"STRAIGHT THROUGH" ASSEMBLY LINE – ALLIS-CHALMERS TO BAKER TO YOU!



The modern Baker plant with its completely equipped fabricating, machining and blacksmithing shops adjoins the Allis-Chalmers crawler tractor plant. When you order an A-C tractor with Baker bulldozer or gradebuilder, your tractor leaves the A-C assembly line, crosses a narrow court and goes on the Baker final assembly line.



THERE'S A JOB FOR THE ALL-PURPOSE HIGHWAY MODEL "E"

● Spreading sand and cinders for ice control on streets, highways airport runways, etc. ● Spreading calcium chloride for dust control on secondary roads, parking lots, airports, fair grounds, etc. ● For seal coat work, spreading chips, sand, etc., over newly laid oil or blacktop ● Patch work spreading ● Spreading commercial fertilizers in parks, on lawns ● Hauling crushed rock and chips ● General road and shoulder maintenance

14 OUTSTANDING FEATURES THAT SAVE TIME, MATERIAL AND MONEY

1. Uniform spread at all speeds.
2. Covers 2 or 4 lane highway in one operation.
3. Spreads material on highway where needed. No material wasted on shoulders.
4. Operates forward or reverse.
5. Spreads to right, to left, or both sides as desired.
6. Material is cast low to ground—no interference with traffic.
7. Spread may be started or stopped with truck in motion.
8. All controls within easy reach of driver's seat—one-man operation.
9. Material is also spread ahead of rear wheels of truck assuring traction and safety at all operating speeds.
10. Electrically welded all steel frame.
11. Wooden hopper eliminates corrosion from chlorides, assures longer life; also wet material won't freeze to sides in cold weather as is often the case with a steel hopper.
12. Ball bearing gear boxes, oil tight, dust and water proof.
13. Self-unloading 24" wide conveyor assures steady material flow.
14. Hopper sides hinged for easier hand loading.

The Highway Model "E" Spreader is made in 9, 11, 13 and 15 ft. lengths—easily mounted on any standard truck chassis. Other lengths made on special order. Write for literature—today.

●

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LEADING CONSTRUCTION MACHINERY DEALERS THROUGHOUT
THE UNITED STATES, CANADA, AND FOREIGN COUNTRIES

HIGHWAY EQUIPMENT COMPANY, INC.
629 D AVENUE N. W. • CEDAR RAPIDS, IOWA

MANUFACTURERS OF THE WORLD'S MOST COMPLETE LINE OF SPREADERS

Check and Mail

Use Coupon on Page 21

Keep Safety Record High With Adequate Warning Signals

90 Bulletin No. 144 NN2-AC8, distributed by the Western Railroad Supply Co., 2406-2436 South Ashland Ave., Chicago 8, Ill., gives a full description of WRRS traffic warning signals, navigation lights, and Model N-N gates for bridge approaches. Styles include neon signal lights with or without bells attached, vertical lift or bascule bridge lamps, and lenses that are visored.

Portable Pump for Fire Fighting

91 The Fitzhenry-Guptill Co., 135 First St., Cambridge, Mass., will send you information about the portable Guptill pump with a triplex plunger that delivers full capacity at high pressure. This pump is particularly adapted for fighting forest fires.

Controlling Filter Flies With DDT Emulsion

92 % Proportioneers, Inc. %, 99 Codding St., Providence, R. I., has released a technical report entitled *Control of Filter Flies by Application of DDT Emulsion to Trickling Filters*, which discusses experiments conducted in this use, as well as methods used in the past—flooding, gasoline torches, special chemicals, and chlorination.

Cab-Ahead-of-Pumpers Fire Truck

93 The American-La France fire trucks carry the cab in front of the pumpers, which means greater driver control and ease of maneuvering. For details of this truck, write the American-La France-Foamite Corp., Elmira, N. Y.

Traffic Line Marking

94 All Kelly-Creswell equipment for drawing traffic lines are provided with "air curtains" which guide the brush without coming in contact with the ground surface. Striping guns by DeVilbiss, air-actuated traction, and pressure cleaning equipment are other features of K-C line markers. For data, write the Kelly-Creswell Co., Xenia, Ohio.

Gasoline-Powered Chain Saw Cuts Costs, Increases Production

95 The Disston chain saw, with a Mercury 2-cylinder, 11-hp gasoline engine, is self-contained and portable. It is a real labor-saving aid for park superintendents, street construction and maintenance crews and others who must clear trees and work them into convenient lengths. Also available are models of 3½ and 5 hp. Write to Henry Disston & Sons, Inc., 865 Tacony, Philadelphia 35, Pa.

Lead Goosenecks for Water Works Plants

96 McDonald lead goosenecks have hand-wiped joints, and are available in sizes of ½, ⅝, ¾, 1, 1¼, 1½, and 2 inches. For information about its line of water works equipment, write the A. Y. McDonald Mfg. Co., Dubuque, Iowa.

Outstanding Traffic Signs

97 Miro-Flex traffic control signs are galvanized on bonderized steel, with a baked enamel finish that is built to withstand the weather while maintaining a high degree of visibility. The Miro-Flex Co., 1824 East Second St., Wichita, Kans., will send you information about its line of markers that may be obtained plain, embossed, or reflectorized with glass or lucite buttons.

POWER ... at low cost

AGSCO

DIESEL GENERATORS

Unit Capacities
100-1250 KVA
50 Cycles 60 Cycles

AN AGSCO INSTALLATION AT ORILLIA, ONTARIO, CANADA

ENGINEERED
AGSCO
DIESEL POWER

SERVICE • DEPENDABILITY • SATISFACTION

A Selection of 100,000 hp. for your Requirements.

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DIESEL ENGINES

AG **SCHOONMAKER CO INC.**

50 CHURCH STREET NEW YORK 7, NEW YORK

Cable Address: **AGSCOMACH PHONE: Digby 9-4350**

Business Est. 1898

DIESEL POWER

TRAFFIC CONTROL

The control and movement of traffic in congested areas is a serious problem confronting traffic officials, today. Traffic regulation in your city can be simplified with Miro-Flex signs. Their high readability day and night, in all kinds of weather, has earned the approval of Government, State and City officials.

Miro-Flex produces a complete series of approved traffic signs, plain embossed and with reflectorized buttons. Standard signs are stocked for immediate delivery, and semi-standard signs can be quickly made to your specifications.

WRITE FOR PRICES AND COMPLETE CATALOG

MANUFACTURED BY

MIRO-FLEX COMPANY

1824 EAST SECOND STREET · WICHITA, KANSAS

THE 3 BEST IDENTIFICATION UNITS MONEY CAN BUY

FOR DWELLINGS - APARTMENT HOUSES OFFICES AND BUILDINGS

PERMA - GLOW The number that glows in the dark.

PLASTIC BRONZE To match brass and bronze hardware.

BLACK PLASTIC Neat . Sturdy . Modern

FOR SAMPLES AND LITERATURE WRITE

Reflecto Letters, Inc.
411 EAST 101st ST. NEW YORK 29, N. Y.
Specialists in House Numbers

There is hardly anything that some man can't make a little worse and sell a little cheaper.

The people who consider price only are this man's lawful prey.

—*Ruskin*

There is no substitute for Quality!

THE AMERICAN CITY

Eastern Distributors of
FISHER M-SCOPE and LEAK DETECTORS

Joseph G. Pollard Co., Inc.

PIPE LINE EQUIPMENT

141 ASHLAND PLACE, BROOKLYN 1, NEW YORK

BUY U. S. SAVINGS BONDS Regularly

Ask where you work . . . Ask where you bank

With an M-SCOPE Water Leak Detector it's easy!

Midget Leak Detector

Saves time, money, mess and trouble

Shows exactly where to dig

Prices from $67.50 to $425.00

IMMEDIATE DELIVERY

DeLuxe M-Scope Leak Detector

—and with the

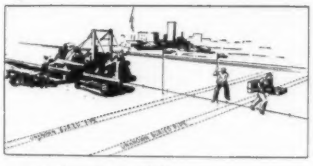
M-SCOPE

Buried Pipe and Cable Finder

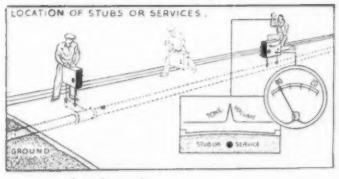
it's easy to locate a hidden pipe and trace its course:

The M-SCOPE is solving successfully the varied problems involved in the development, operation and maintenance of buried pipe and cable systems, and is in daily use on projects engaged in by

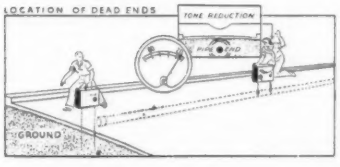
Federal Departments
Municipalities
Water Companies
Power and Light Companies
Oil and Pipe Line Companies
Industrial Companies
Airport Managers
Consulting Engineers



easy to locate a stub:



—or a dead end:



M-SCOPE quickly locates the exact position of underground pipe lines, pipe bends, dead ends, valves, cast iron bells, stubs, service connections, etc.

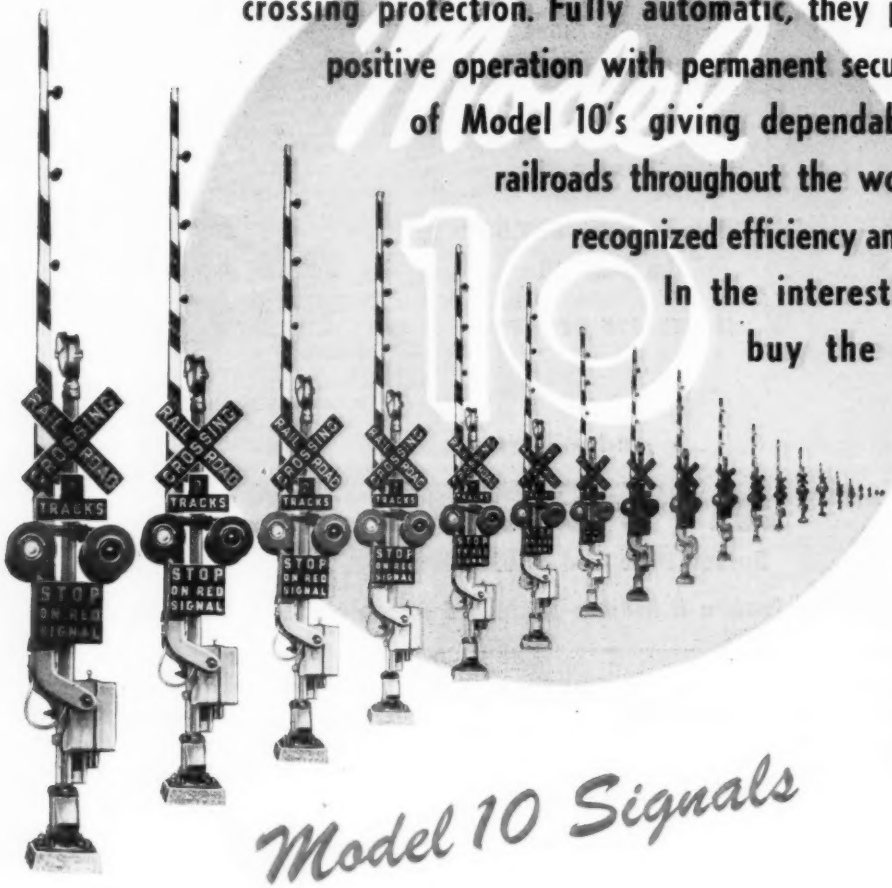
Free 16-Page Booklet Upon Request

FISHER RESEARCH LABORATORY, Inc.

Palo Alto, California

Best Buy in Safety

Model 10 Signals are today's best buy in railroad-highway grade crossing protection. Fully automatic, they provide continuous, positive operation with permanent security. The thousands of Model 10's giving dependable service on 80 railroads throughout the world are PROOF of recognized efficiency and practical economy. In the interest of public safety, buy the best . . . . buy



Model 10 Signals

- Operate on the closed circuit principle.
- Operate regardless of weather or temperature conditions.
- Effectively safeguard against "second train" accidents.
- Block traffic in approach lanes only.

TIME-TESTED Model 10's

Eleven years of service—and NOT ONE FATALITY has ever occurred as a result of operation failure on the part of Models 10's.

Write for Bulletin G-14-AC9

U. S. Pat. Nos. 2,137,196; 2,362,710; 2,372,579. Pat'd in Canada 6-27-39

MODEL 10 HIGHWAY CROSSING SIGNALS ARE THE PRODUCT OF
WESTERN RAILROAD SUPPLY CO.
Designers and Manufacturers of Safety Devices for Railroads
Foreign Representatives
GUTERMAN COMPANY, INC., 25 SOUTH WILLIAM ST., NEW YORK 4, N. Y. and LONDON
INTERNATIONAL STANDARD ELECTRIC CORP., 67 BROAD ST., NEW YORK 4, N. Y.
2406-2436 SOUTH ASHLAND AVE.
CHICAGO 8, ILL.

CERTIFICATE OF MERIT Safety WESTERN RAILROAD SUPPLY CO. NEW YORK WORLD'S FAIR 1939 SCIENCE AND INDUSTRY

THE TRUCK WITH A

$56,000,000.00 ENDORSEMENT

THE FWD "H" SERIES

America's Foremost Heavy-Duty Truck

A truly great truck — the FWD "H" Series—a truck that in just six years has won the endorsement of motor truck users to a total of $56,000,000.00 in purchases — a truck that offers the advantages of a phenomenal record of $56,000,000.00 in manufacturing experience.

Rated at 20,000 lbs. gross, the FWD "H" Series represents the highest development of the four-wheel-drive principle, pioneered by FWD in 1910, and recognized all over the world for outstanding heavy-duty performance.

FWD safety and surety—the dependable pulling power and traction of four driving wheels — the ability to do more work at low-cost-per-ton-mile, and to move capacity loads to location, on or off the highway — these FWD four-wheel-drive advantages are vitally important in heavy-duty trucking operations. Wherever motor truck performance must be more than usually dependable—in highway or municipal service, in utility line construction and maintenance, in oil-field operations, in heavy hauling on or off the highway — FWD four-wheel-drive trucks render valuable service.

There is an FWD Distributor near you . . . see him for complete information.

THE FOUR WHEEL DRIVE AUTO CO., Clintonville, Wisconsin

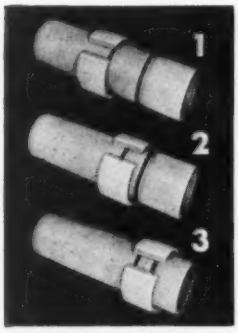
Canadian Factory: Kitchener, Ontario

WORLD-WIDE SALES and SERVICE

Engineering Facts about TRANSITE PRESSURE PIPE

Subject:—JOINTS

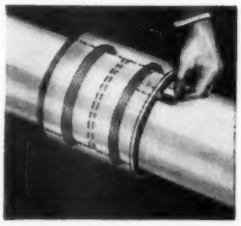
THE SIMPLEX COUPLING—the standard coupling for Transite* Pressure Pipe—was engineered by Johns-Manville to minimize costly underground leakage and to provide maximum protection against pipe line failures resulting from trouble at the joints.



SIMPLICITY of the Simplex Coupling helps assure perfect joints independent of workmen's skill. These cutaway views show complete assembly operation: (1) Start, (2) Sleeve pulled over one ring, and (3) Final position with sleeve centered over joint.

It consists of only three parts: a Transite sleeve, carefully machined to fit over the end of the pipe, and two rubber rings which, when assembled, are tightly compressed between pipe and sleeve. The result is a tight yet flexible seal that provides a number of important advantages.

First, its effectiveness does not depend on the individual skill of the workmen. The Simplex Coupling is, in effect, a factory-made joint which is simply *assembled* on the job. Perfect joints are quickly, easily made, even by inexperienced crews. And—a unique feature—each joint may be checked for proper assembly immediately upon completion.

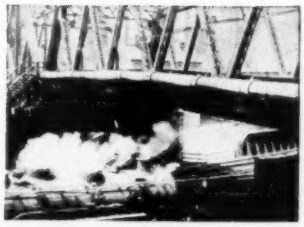


PROPER ASSEMBLY of each joint is readily checked by inserting a feeler gauge between sleeve and pipe. If position of the rubber rings is correct, the joint is properly made.

Moreover, the flexibility inherent in the design of this coupling safeguards against leakage once the pipe has been placed in service. Because each joint is capable of deflection, the entire line has a flexibility not commonly found in other types of underground water line construction. This minimizes flexural stresses in the line . . . enables the pipe to conform to soil movement . . . helps it absorb the vibration of heavy traffic under busy city streets. Many thousands of miles of Transite Pipe confirm the ability of the Simplex Coupling to protect the line against the stresses that so often cause joint leakage and frequently result in pipe failure.

DEFLECTIONS up to 5° at each joint are possible with the Simplex Coupling. This permits laying the pipe around curves or obstructions as shown by the installation above.

Joints that stay tight in service are but one of many important advantages of Transite—the modern asbestos-cement pipe that was engineered to carry water more efficiently and more economically. For further engineering facts, write for Brochure TR-11A. Address Johns-Manville, Box 290, New York 16, N.Y.



The flexibility inherent in the Simplex Coupling helps guard against the shock and vibration of traffic. Under busy city streets, this factor also minimizes flexural stresses.

*Transite is a registered Johns-Manville Trade Mark

JOHNS-MANVILLE JM PRODUCTS

AMERICA'S SERVICE MEN ROLL WITH AMERICAN EQUIPMENT

● *What makes service trucks different from standard trucks?*

The service man has the answer. He knows how important it is to have the right tools at the right place at the right time.

American Bodies provide a place for everything. They have shelves, hooks, trays, drawers, boxes, nooks, corners, and plenty of space for the hundred and one tools needed on a job.

Different service jobs require different kinds of bodies. American makes several models for the power, light, telephone, water and gas utilities, and other industries. The American line of bodies includes:

Line Service, Maintenance, General Service Meter Installation, Utility, Crew Compartment.

American also has a complete line of overhead equipment, including the revolving aerial ladder, Tower Lift, and Seagrave.

When service men roll with American, they always have all the tools they need to do the job.

PRODUCTION RECORDS SMASHED!

Production of American bodies continues at the highest rate in our 30-year history. Each month sees new production records. But unprecedented demand slows our deliveries. We are doing everything in our power to satisfy your requirements for American bodies.

ACB and

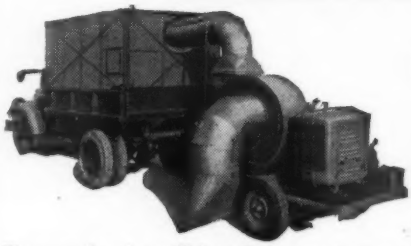
THE American COACH and BODY COMPANY

9503 WOODLAND AVE., CLEVELAND 4, OHIO

SALES and ASSEMBLY OFFICES THE AMERICAN COACH AND BODY CO. OF CALIF., 432 FIFTH ST., OAKLAND 7, CALIF. BAKER EQUIPMENT ENGINEERING CO., SUMMIT & NORFOLK STS., RICHMOND 11, VA. 350 MADISON AVE., NEW YORK 17, N. Y. INSURANCE EXCHANGE BLDG., DES MOINES 9, IOWA

Attention: CITY MANAGERS!

Save Time . . .
Men . . . Money
. . . and DO A
BETTER JOB



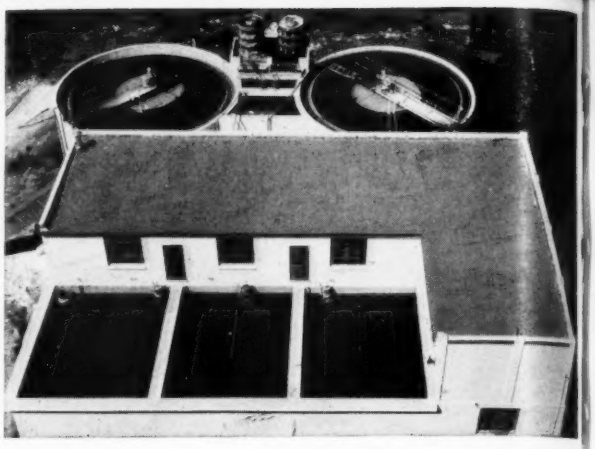
Use the VACUUM LOADER

Vacuum Loader will handle leaves (wet or dry), papers, small sticks, bits of glass, nails, etc. Also cotton, grain, etc.
This is the answer to your street sweeping problem. Loads all your curb debris and in addition takes care of your catch-basins before they fill up.

See your equipment dealer and if he does not handle it, write to

Leaf Loader Div., AMERICAN STRUCTURAL STEEL and TANK CO.

M. A. ELLIOTTE, *Sales Manager*
928 VIRGINIA PARK **DETROIT 2, MICHIGAN**



With the ACCELATOR* Today's Water Treatment Plant Has Many Advantages

● **SAVES UP TO 80% IN SPACE** by combining in one unit the former separate steps of quick mixing, coagulating, settling and sludge removal.
● **LOWER CONSTRUCTION COSTS** result from the space-saving compact unit feature of the ACCELATOR. There is considerably less concrete structure.
● **SIMPLER OPERATION** is due to the automatic features of the ACCELATOR. It maintains at all times the optimum conditions for chemical treatment of water, provides for mixing, ample reaction time, effective clarification, and automatic sludge removal.
● **CHEMICAL REACTION IS FASTER,** because it takes place on the surface of old particles of an already well coagulated slurry with which the raw water and treating chemicals are intermingled.
● **HIGHER RATINGS,** because clarified treated water rises from the surface of the circulating slurry pool. There is no settling of solids—no percolating or filtering up through a suspended sludge blanket. Clear treated water separates from a dynamic flow of slurry.

Send for a copy of ACCELATOR Bulletin 1824. INFILCO Inc., 325 West 25th Place, Chicago 16, Illinois.
*Trade-Mark Reg. U. S. Pat. Off.

IF YOU WANT TO KNOW — ASK INFILCO

FOR STOPPING LEAKS IN PIPE LINES...

Emergency Pipe Clamp—the universal repair clamp the world over, for nearly half a century! Easy to apply. Saves cost of new pipe—eliminates job of tearing out old and putting in new.

M. B. SKINNER CO.
SOUTH BEND 21, INDIANA

SKINNER-SEAL EMERGENCY PIPE CLAMPS

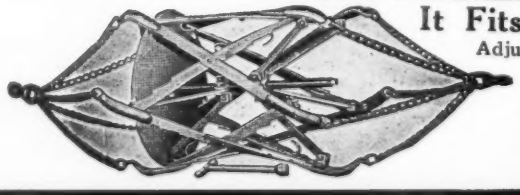
Why wish for Ward LaFrance quality when you can get a Ward LaFrance truck as quickly as you can say "Ward LaFrance"—well, almost!

See your dealer or write for illustrated bulletins with specifications and body builder's chart.

WARD LAFRANCE TRUCK DIV., ELMIRA, N. Y.

EXPANDING ROOT CUTTER & SEWER CLEANER

Open and in action removing roots and caked sediment like this.



It Fits in on Every Sewer Cleaning Job

Adjusted in 30 seconds to fit any sewer from 8 to 30 inches.

Will clean the entire sewer wall, top, and sides as well as the bottom, cutting and removing the roots and caked sediment, putting the sewer system in almost 100% clean condition.

Write for our new catalog on complete sewer cleaning equipment.

EXPANDING SEWER MACHINE COMPANY
108 East Walnut St. **Nappanee, Ind.**

A GREAT METER-MADE EVEN BETTER!

TYPE 2 PITTSBURGH IMO with 5 Major Improvements

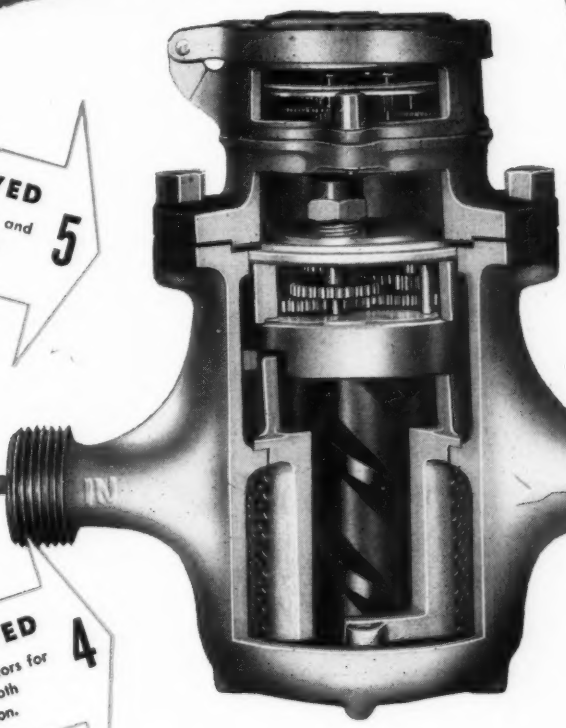
1 IMPROVED Larger measuring chamber for increased capacity.

2 IMPROVED Bigger diameter rotors for greater driving power, slower operating speed.

3 IMPROVED Heavier casting, larger body.

4 IMPROVED Precision cut rotors for satin-smooth operation.

5 IMPROVED Better materials and manufacturing techniques.



Cut-away view of ⅝ in. Type 2 Pittsburgh IMO meter

Here's welcome news for a great many water works men. The always silent, supremely accurate, durable and long-lived Pittsburgh IMO meter is again in production. And the Type 2 IMO is a greatly improved version of the original Type 1 model which, in itself, set new high performance standards for domestic meters. The war years presented the opportunity to reproportion component parts . . . to thoroughly test improved materials . . . to completely re-tool for precision, volume output.

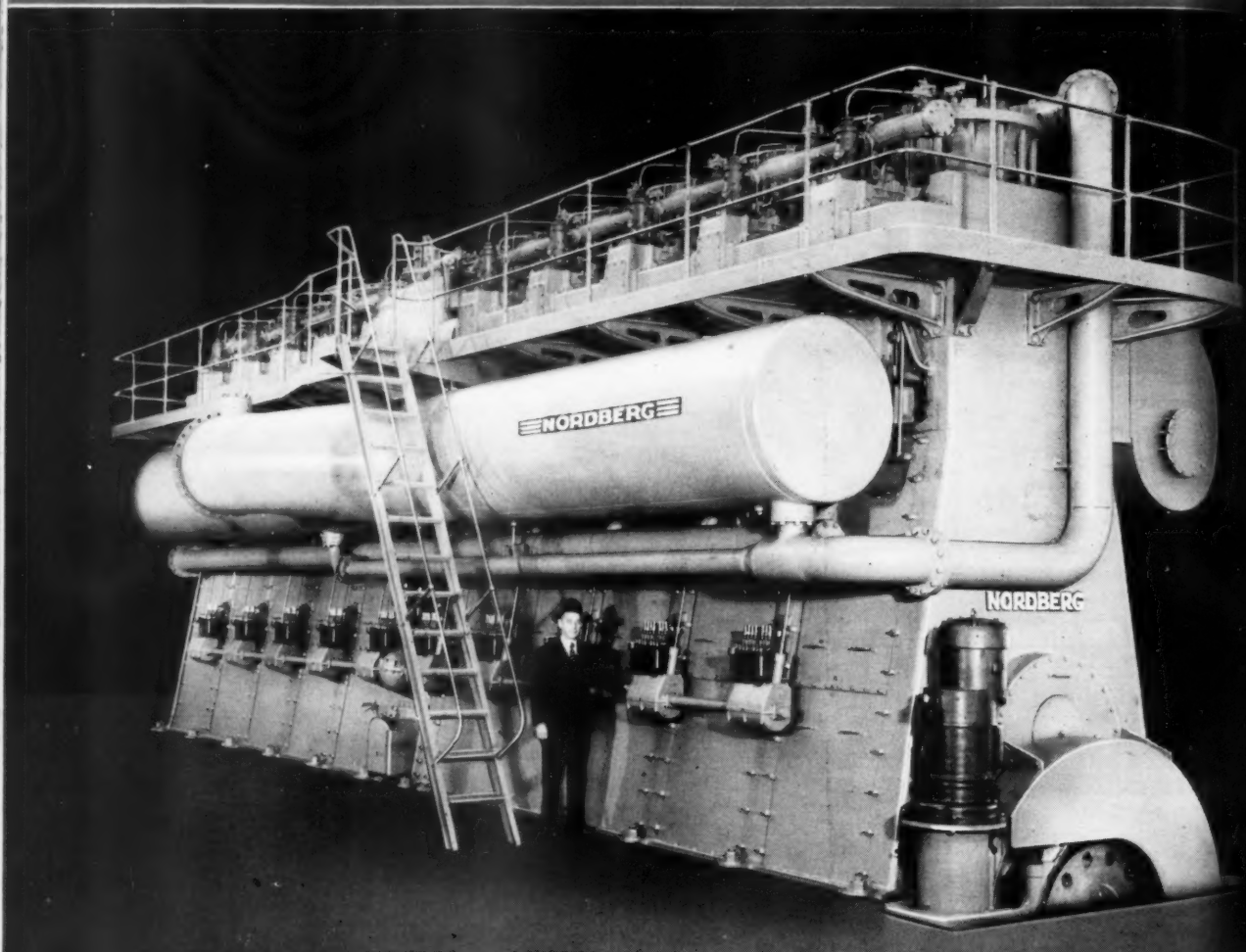
Without question, the Type 2 Pittsburgh IMO is the finest water meter ever produced. And in today's market it's the top value leader. There's no time like the present to look into the many advantages of this exclusive design. Ask our nearest district office for an eye-opening demonstration.

PITTSBURGH EQUITABLE METER DIVISION

Rockwell Manufacturing Company • Pittsburgh 8, Pa.

Atlanta Boston Chicago Houston Kansas City Los Angeles New York Pittsburgh San Francisco Seattle Tulsa

MOST POWERFU

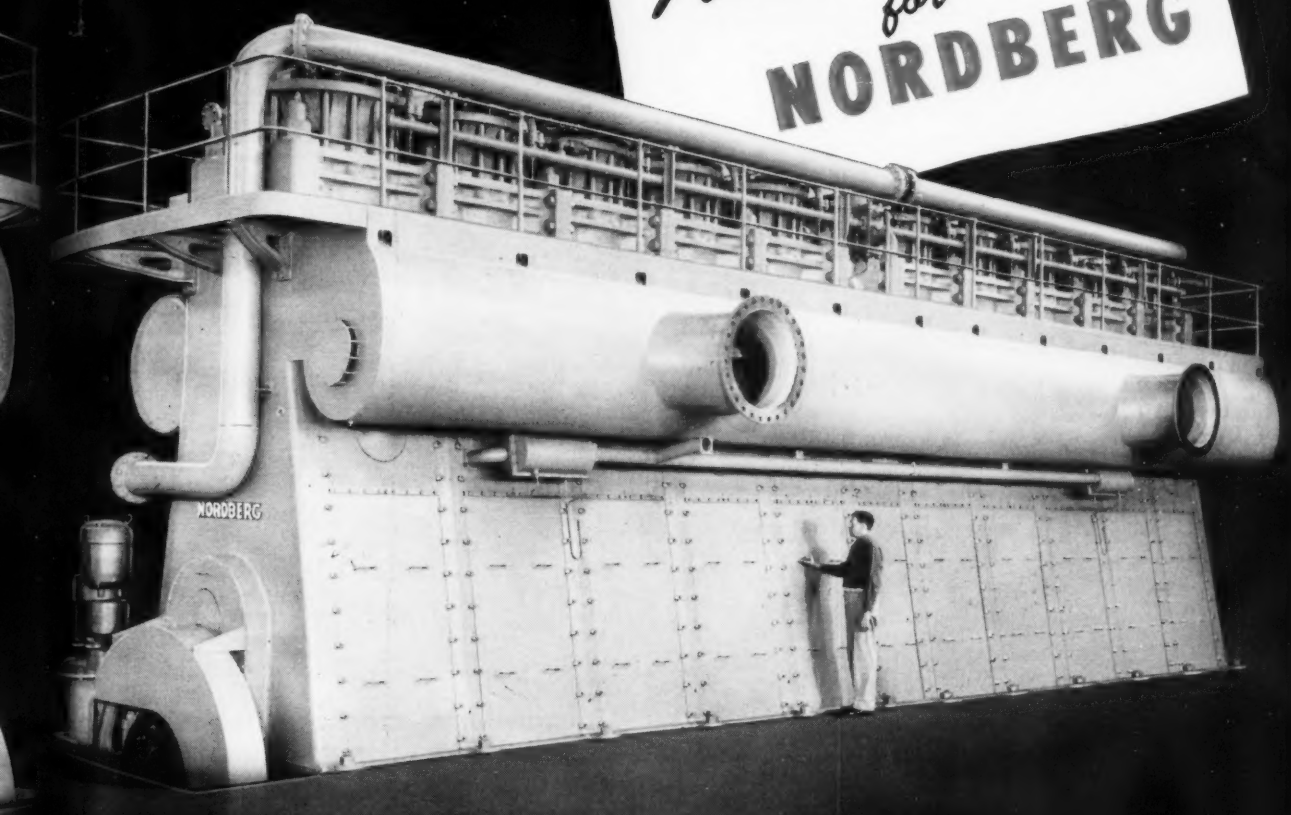


The position of leadership held by Nordberg in the large Diesel engine field is again evidenced by the building of this 7100 horsepower unit, the most powerful single acting Diesel generating set built in America. It is another achievement in the impressive record of more than thirty-five years of Diesel engine building. Whenever there has been a demand for units of greater capacity, Nordberg has met that demand. For greater dependability and higher efficiency, a Nordberg Diesel is available for your needs.

NORDBERG DIESEL ENGINE

IESEL GENERATING UNIT UILT IN AMERICA

Another Record for NORDBERG



Nordberg builds an extensive line of Diesel engines in sizes to 8500 horsepower, in two and four-cycle types for burning oil or gas fuels. Whatever your requirements, whether for stationary or marine service, it will pay to investigate the merits of Nordberg Diesel engines.

NORDBERG MFG. CO.
MILWAUKEE 7, WISCONSIN

ENGINE DATA

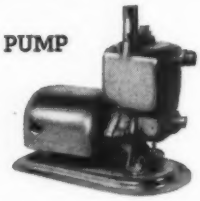
Horsepower (Net)	7100 (sea level)
Generator (Net)	5000 KW
Number of Cylinders	10
Bore	29 inches
Stroke	40 inches
Speed	164 R.P.M.

Two-Cycle, Mechanical Injection, Cross Head Construction, Motor Driven Scavenging Blower, Flywheel Type Generator.

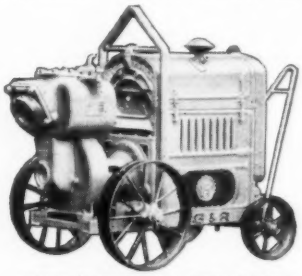
For Stationary and Marine Service

PUMPS — Engineered to Do the Job!

THE HANDY PUMP



Fitted with pipe or common garden hose, this pump will lift water up to 25 feet. Delivers 8 gal. per min. at 40 lbs. pressure. Electric motor driven – self priming – weighs only 20 lbs.

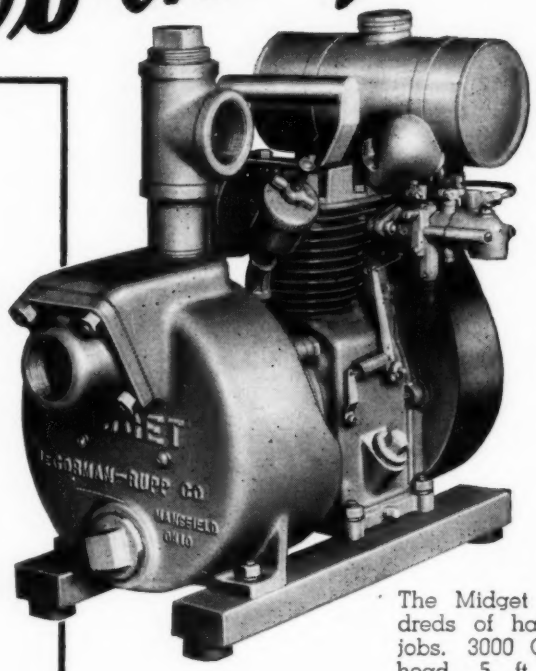


THE MODEL 1602 (90M)

Gorman-Rupp model 1602 will pump 90,000 GPH at average total head.

THE NEW ODORLESS SANITARY CLEANER (O. S. C.)

A modern apparatus for cleaning septic tanks, vaults and cisterns. Shipped complete ready to mount on standard truck chassis, 158 to 161 in. length. Septic tanks of 1000 gallon capacity cleaned in 20 minutes. Approved by public health officials. Write for bulletin 7-ST-11.



THE MIDGET

The Midget can do hundreds of handy pumping jobs. 3000 GPH at 20 ft. head, 5 ft. suction lift; and it weighs only 60 lbs.

Gorman-Rupps are the simplest, most rugged design of any self-priming centrifugal pump made. They are engineered to give the best performance possible under any and all conditions and to assure continuous trouble-free service for a long period of time.

Faster Priming – more efficient – just start the motor and you start the water without making any adjustments.

Will not clog – nothing to cause stoppages – no valves, vents or ports – no tubes – no orifices – no clean-out plates.

Whatever the size or application from 3000 GPH up to 25,000 GPH you can do the job more profitably with a dependable Gorman-Rupp Blue Pump.

Write for further information or contact your nearest distributor.

THE GORMAN-RUPP COMPANY

Gorman-Rupp Pumps — Unsurpassed for Priming Fast

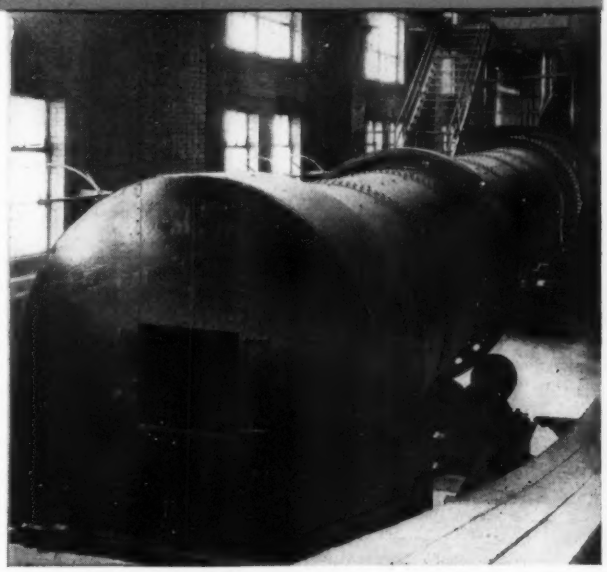
343 NORTH BOWMAN STREET **MANSFIELD, OHIO**

Working to Keep Municipalities CLEAN AND HEALTHY

Dewatering and drying equipment in Sewage Disposal Plants has for the past few years operated under difficult and trying conditions. Operating records covering these years are an excellent recommendation as a guide to performance in the future.

Conkey Sludge Filters and Louisville Rotary Dryers have, in both large and small communities, demonstrated their ability to successfully cope with overloads and unusual operating requirements.

General American engineers, skilled in designing and building dewatering and drying equipment, are glad to work with municipal and consulting engineers in planning new units or revamping present plants to meet changed conditions.



OTHER GENERAL AMERICAN EQUIPMENT

Screening Dryers	Water Tanks
Sludge Gas Holders	Turbo-Mixers
Garbage Dryers	Thickeners
Hydroseparators	Steel-Alloy Platework
Storage Tanks	Steel Stacks

General American
TRANSPORTATION CORPORATION
process equipment • steel and alloy plate fabrication

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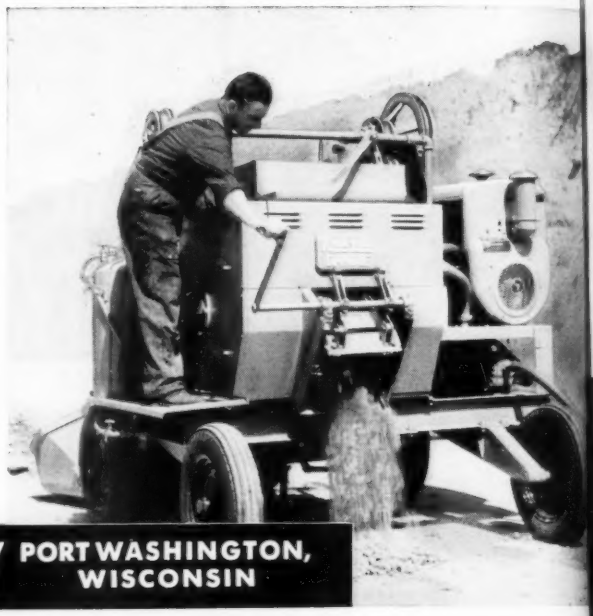
WORKS: Sharon, Pa., East Chicago, Ind.
OFFICES: Chicago, Sharon, Louisville, Orlando, Washington, D. C.
Pittsburgh, St. Louis, Salt Lake City, Cleveland.

GATX

4 Modern Tools to Cut

END DISCHARGE SAVES PATCHING TIME with KWIK-MIX BITUMINOUS MIXER

Kwik-Mix Bituminous Mixers materially reduce patching time, because they combine two important time-saving features: (1) End Discharge, (2) Non-Tilting Discharge. End discharge makes possible direct pouring of mix into break. No wheelbarrow is needed. Because of end discharge, mixer never is pulled through new patch. Non-tilting feature speeds discharge every batch. Full drum is emptied in seven seconds through big discharge door. Door easily opened with one hand. Back-breaking tilting is eliminated. Operator fatigue near end of shift and resulting production loss is eliminated.



KWIK-MIX COMPANY PORT WASHINGTON, WISCONSIN

IDEAL FOR CITY WORK . . . *Parsons* 221 TRENCHLINER*

The new Parsons 221 Trenchliner, public service model in the Parsons line of trenchers, sidesteps surface obstructions as close as 10" to either side of the projected trench. Boom shifts from side to side across entire width of boom carriage. Easy to shift, because it rides smoothly on big diameter rollers. Arc type spoil conveyor reaches up 6' 9", easily dumps into 1½-ton trucks. Telescoping ladder type boom can dig over and under obstructing pipes in trench, virtually eliminating hand work.

*T/M REG. U. S. PAT. OFF.

PARSONS COMPANY NEWTON, IOWA

YOUR Maintenance Costs

Preventive maintenance with KOEHRING MUD-JACK pays BIG DIVIDENDS

T/M REG. U. S. PAT. OFF.

Koehring Mud-Jack reduces maintenance costs on concrete street slabs, sidewalks, curbs and gutters. Sunken slabs, sidewalks, curbs and gutters can economically be raised to grade before weakened subgrade conditions can cause damage. Through small holes drilled into depressed slab Mud-Jack pumps inexpensive cement-sand slurry to replace firm foundation beneath concrete. Cost of Mud-Jack maintenance is but a fraction of replacement cost. Koehring No. 10 Mud-Jacks and Koehring No. 50 Mud-Jacks are used by cities, towns and counties throughout the U. S.

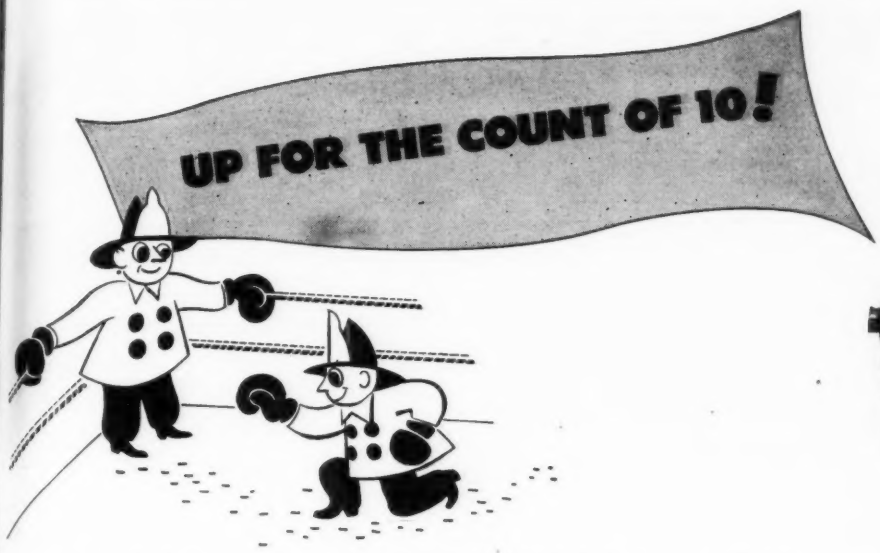
HEAVY-DUTY *Handyman*

In the Koehring 205, the new Heavy-Duty Half Yard, exceptionally heavy construction for a machine of its size is combined with all the half yard features that make this model ideal for city yard and maintenance work. Independent traction and fast swing step up output when 205 works as crane or clamshell, handling aggregates, pipe, lumber. Chain-driven double cable crowd gets extra power to dipper when 205 is used as shovel. Completely and easily convertible. Available on crawlers or on truck chassis as a one-man operated Cruiser Crane.

KOEHRING COMPANY MILWAUKEE 10, WISCONSIN

782

Low Cost Insurance
FOR SERVICE PIPING
STREAMLINE Copper Service Pipe represents one of the lowest cost forms of insurance that water works officials, who are responsible for the return on a heavy capital investment, can adopt.
In normal times STREAMLINE Copper Pipe compares very favorably in cost with ferrous pipe, yet with the exception of certain abnormal soil and water conditions, it never has to be replaced due to rust or internal corrosion. Consequently, there is no discoloration of the water nor decrease in volume or pressure, such as is invariably found, after a few years, with corrodible piping.
Leaks due to vibration are eliminated. A STREAMLINE Copper Service Pipe installation is practically vibration proof, settlement of filled earth or water mains have little or no effect upon it. Its quality of ductility permits sufficient stretch to take care of this condition without failure of the pipe.
STREAMLINE Service Pipe (Type K) is the original copper service pipe, and the first to be produced in America for water service work. It is the most uniformly soft and pliable pipe possible to secure—it is kept that way through the use of the best copper obtainable for the purpose and through strict laboratory control through every phase of its manufacture.
When your plans call for pipe and fittings for replacement or for postwar work, carefully consider STREAMLINE. Its use will repay you many times over.
STREAMLINE
PIPE AND FITTINGS DIVISION
MUELLER BRASS CO.
PORT HURON, MICHIGAN
MUELLER BRASS CO.—PORT HURON, MICHIGAN
M.B.Co.



There's just one way a Mathews Hydrant is like an ordinary hydrant—it can be knocked out in a traffic mishap. But the makers have a quick and perfect answer to that problem—a removable barrel containing all the working parts.

This barrel is to a Mathews what a spare tire is to a car. Two men with a lug wrench can unscrew the barrel and insert another in no time. An above-ground job, it does away with pavement-breaking and excavating. Usually before its service is missed, the hydrant is back on duty—cost and precious time held to the minimum. And, thanks to this exclusive Mathews feature, repairs can be done in the shop.

Mathews Hydrants are known and preferred the world over. Choose Mathews for your community and you'll be rendering a public service of the highest order.

OTHER FEATURES OF MATHEWS LEADERSHIP

Head can be rotated a full circle, on swivel flange • Replaceable head permits change in nozzle outlets • Nozzle levels can be raised or lowered without excavating • Barrel screws into bronze bushing in elbow • Operating thread (easily accessible) is only part that needs oiling. • A modern barrel makes even the oldest Mathews good as new.

MATHEWS HYDRANTS

Made by **R. D. WOOD COMPANY**

PUBLIC LEDGER BUILDING, INDEPENDENCE SQUARE, PHILADELPHIA 5, PA.

MANUFACTURERS OF "SAND-SPUN" PIPE (CENTRIFUGALLY CAST IN SAND MOLDS) AND R. D. WOOD GATE VALVES

COLD FACTS ABOUT THE

ONE book of facts can be worth more than a library of books based on conjecture.

Such a book* of facts has recently been published by the American Water Works Association. It records the findings of a study of "Survival and Retirement Experience With Water Works Facilities" in 25 cities.

With the permission of the A.W.W.A., we have reprinted, in brochure form, the facts as they apply to cast iron pipe. This brochure is available on request. Write to the Cast Iron Pipe Research Association, Peoples Gas Bldg., Chicago 3, Illinois, and ask for a copy of "Survival and Retirement Experience With Cast Iron Water Mains."

A feature of this brochure is a chart showing the percentage of cast iron water mains that have survived out of all such mains laid by these 25 cities from the first, some as early as 1817. For example, in sizes 6-inch and over, *more than 90 per cent of all the cast iron pipe that has ever been laid in these cities is still in service.*

Tabulations showing in detail the survival and retirement experience with cast iron water mains, in various sizes, are given for each city; also experience with cement-lined cast iron pipe in the 16 cities that have installed it.

*Available from American Water Works Association, 500 Fifth Ave., New York.

CAST IRON PIPE

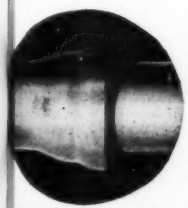
HE LIFE OF WATER MAINS

The 25 cities were carefully selected to comprise a representative cross-section of conditions; the study was concerned solely with discovering and reporting the facts.

For your convenience and quick reference, we have reprinted such facts as apply to cast iron pipe only—facts which leave no room for conjecture if what you want is water mains with assured long life and efficient life.

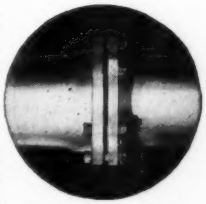
"Cast iron pipe not only offers a century or more of efficient life as a structure—it offers a century or more of efficient life as a carrier. In the limited areas with tuberculating waters, cement-lined cast iron pipe is tuberculation-proof and insures high carrying capacity for the life of the pipe. In the greatly predominating areas without tuberculating waters, the carrying capacity of unlined cast iron pipe remains practically unimpaired for the life of the pipe."

Joints for Cast Iron Pipe



Bell-and-Spigot Joint: the standard joint for water and sewerage service.

A variety of joints are available, of which the two most widely used are illustrated. Special purpose joints, such as the Ball-and-Socket, or Flexible Joint for underwater use, and the Flanged Joint for above-ground use, are also available.



Mechanical Joint: bottle-tight and flexible, now with interchangeable parts.

"SILENT SERVICE is not enough"—A.W.W.A.

The American Water Works Association is recommending to its members, for local action, a sound, well-planned program of Public Relations publicity and advertising. It is based on the premise that good water service, like good health, is too often taken for granted, in which case favorable public opinion is dormant.

To co-operate with this program and help to arouse national recognition of the efficient service rendered by America's water supply systems, the Cast Iron Pipe Research Association is presenting little known facts about public water supply to the *six million* readers of "Time" and "Nation's Business" throughout 1947.

For example, the following human-interest cartoon and excerpts from a current advertisement

"extra!—*read all about it*"

All this excitement about water? Well, if you lived in one of the 5700 towns* that need a water supply system, or any town that needs improvement to its water supply system, you'd understand. An abundant supply of potable water makes life easier, safeguards health and property, attracts industry, rarely increases taxes. The cost of installing or improving a municipal water supply system is usually financed by a bond issue to be liquidated out of revenue from a low delivered cost to the consumer—a cost that averages less than a dime for a ton of safe and palatable water.

Because of the efficient and economical operation of America's water supply systems, water works construction or improvement bonds are rated among the most stable of investments, and have a ready market at a low rate of interest.

*U. S. Public Health Survey, released July 6, 1947

Cast Iron Pipe Research Association, Thos. F. Wolfe, Engineer, Peoples Gas Bldg., Chicago 3, Illinois.

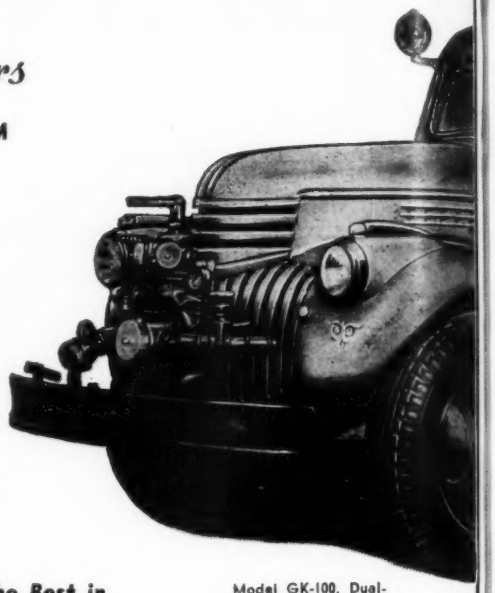
SERVES FOR CENTURIES

Here Are Your Answers

TO THE FIRE FIGHTING PROBLEM

First **CONVERT FIRE TRUCKS NOW IN SERVICE**
In just a few hours you can install the BARTON-AMERICAN front-mounted, dual-purpose, centrifugal pump that delivers either a solid stream or fog spray.

Second **NEW TRUCKS COMPLETE**
BARTON-AMERICAN Fire Trucks are made to meet and exceed all Underwriters' requirements. You have your choice of any commercial chassis. Available in several models.



WRITE TODAY for full information. Our representatives will call at your request.

***When You Want the Best in* PERFORMANCE, ECONOMY AND DURABILITY**

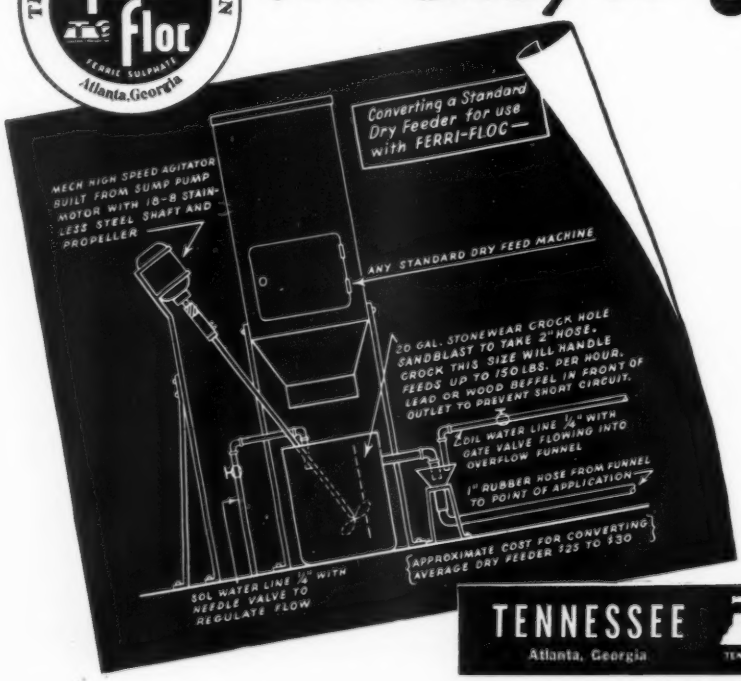
Model GK-100, Dual-Purpose, Gear-Driven, Front Mounted, Centrifugal BARTON-AMERICAN Fire Pump.

AMERICAN-MARSH PUMPS, INC.
BATTLE CREEK, MICHIGAN

AMERICAN-MARSH PUMPS

TENNESSEE CORPORATION
Ferri-Floc
FERRIC SULPHATE
Atlanta, Georgia

It's Easy to CONVERT


Converting a Standard Dry Feeder for use with FERRI-FLOC—
MECH HIGH SPEED AGITATOR BUILT FROM SUMP PUMP MOTOR WITH 18-8 STAINLESS STEEL SHAFT AND PROPELLER
ANY STANDARD DRY FEED MACHINE
20 GAL. STONEWEAR CROCK HOLE SANDBLAST TO TAKE 2" HOSE. CROCK THIS SIZE WILL HANDLE FEEDS UP TO 150 LBS. PER HOUR. LEAD OR WOOD BEFFEL IN FRONT OF OUTLET TO PREVENT SHORT CIRCUIT.
SOIL WATER LINE ¼" WITH GATE VALVE FLOWING INTO OVERFLOW FUNNEL
1" RUBBER HOSE FROM FUNNEL TO POINT OF APPLICATION
APPROXIMATE COST FOR CONVERTING AVERAGE DRY FEEDER $25 TO $30
SOL WATER LINE ¼" WITH NEEDLE VALVE TO REGULATE FLOW

In most instances standard dry feed machines can easily be converted to feed a true liquid solution of Ferri-Floc. The advantages resulting make for a more economical, efficient and trouble free operation.

Ferri-Floc has lowered the operating cost of Municipal and Industrial water and sludge conditioning plants from the Rockies to the Atlantic Coast.

Ferri-Floc does not pass through a gummy stage when going into solution; no appreciable heat of solution is given off, thus eliminating the necessity of exhaust fans on the solution pot. Ferri-Floc is partially hydrated and can be stored for indefinite periods of time—it may be shipped in bulk or in 100 pound bags.

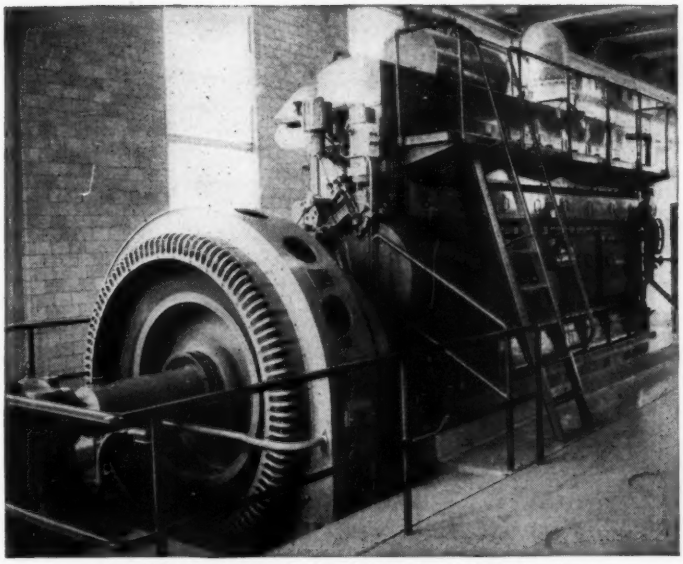
We invite your inquiries for further information on the converting of your dry feeder to the use of the economical coagulant Ferri-Floc.

TENNESSEE CORPORATION
Atlanta, Georgia — Lockland, Ohio

NEWS

FROM THE PUBLIC WORKS FRONT

AS REPORTED BY THE DEVELOPMENT ENGINEERS, FIELD SERVICE REPRESENTATIVES AND CUSTOMERS OF WORTHINGTON



Type SEHG0-8 supercharged Worthington Dual-Fuel Diesel engine.

Supercharged Dual-Fuel Diesel Goes Into Service— Over 36% Thermal Efficiency

What can be accomplished by supercharging a dual-fuel Diesel has been demonstrated by the performance of the new Worthington engine in the municipal power plant at Lamar, Colo.

This 1530 hp engine, recently installed to drive a 1080 kw generator, has turned in a record of over 36% thermal efficiency—7050 net btu per brake horsepower hour (total of gas and pilot oil fuels) at full load. Elevation is 3600 ft.

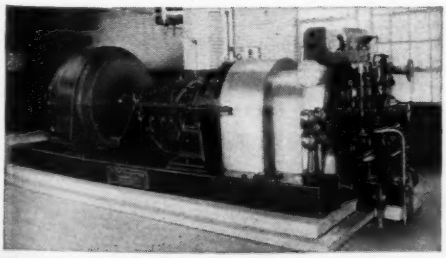
Worthington achievements in producing the first U. S.-built 4-cycle dual-fuel engine and the world's first supercharged engine of this type were among the reasons why Lamar selected Worthington equipment, to take care of its greatly increased demand.

The Worthington engine at Lamar uses natural gas on the Diesel cycle, but in case of gas line failure, it is quickly convertible (by a turn of a wheel) to Diesel oil or any mixture of gas and oil. With gas, the fuel cost is slightly more than one mill per kw.

The supercharger utilizes the energy of the engine exhaust to drive a blower which supercharges the engine. In addition to increasing horsepower about 50%, this improves mechanical efficiency and scavenging, resulting in lower fuel consumption. Lubricating oil requirements are also reduced. Further economies result from the lower installation cost: less building space, smaller foundations, etc.

Activity in the Lamar territory has increased so much in the past six years that the power plant has been hard pressed to keep its customers supplied. Construction of a new dam a few years ago doubled the load, and the expansion of the local milling industry further increased the load so that Lamar needs, today, three times the power it used in 1940 (and 18 times the power used in 1921).

The new generating unit is being used for peak loads and standby services.



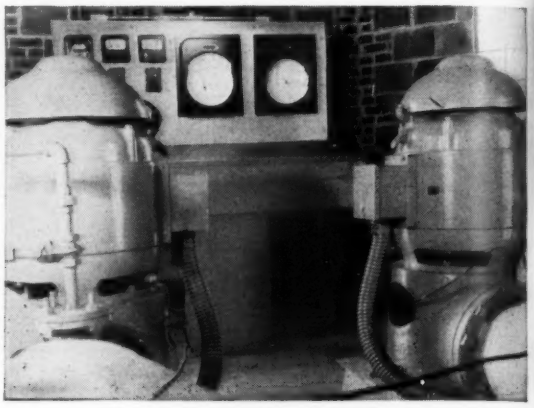
Worthington 500 KW turbine at New York's Dept. of Sanitation Incinerator Plant on 56th Street.

The Incinerator on 56th Street

New York City maintains an incinerator plant on 56th Street. This plant uses the heat generated in burning refuse to make power for operating cranes, lights, plant auxiliaries.

Two Worthington 500 KW alternating current geared turbine-generator units supply the power. They were installed in 1936. They operate on steam at 200 lbs. pressure supplied from the waste heat boiler and exhaust at 5 lb. back pressure.

Worthington Helps Ranney System at American Cyanamid



Two Worthington turbine pumps in American Cyanamid Company pump house.

American Cyanamid Company's new plant in Wallingford, Conn., is located on sandy flats.

One of the principal problems was to find a suitable source of process water. The plant being located in a valley, it was presumed that enough ground water would be available. But after six wells had been placed in operation, it was found that the geological formation was such that the water supply dwindled, leaving no reserve for plant expansion.

A survey of subterranean water sources was made by an experienced geologist who disclosed that a valuable aquifer existed on the property. One of the latest types of water collecting system, designed by the Ranney Water Collector Corporation, was installed.

Worthington In the Pumping Station

The system works this way. 1, A large area of water-bearing formation is exposed to horizontal screen pipes located below the ground water table. 2, Selective removal of the fine material from the aquifer in the vicinity of the screens and the formation of more permeable ground or a gravel pack adjacent to the screen produce a series of radiating drainage canals emptying into a central shaft. 3, The lines lead to portholes in the lower section of a concrete cylinder, sealed at the bottom.

This compact unit is capable of producing, for American Cyanamid Company, 5 million gpd. The water is colorless, odorless, tasteless and bacteria-free due to the large infiltration area and the 80-ft depth of sand and gravel through which it travels to the pipes.

Two Worthington turbine pumps were selected for the pumping station. Each has a capacity of 100 gpm. The flexibility provided by the Worthington design is ideal because added capacity can be obtained from each pump at moderate additional cost.

Water from the caisson bottom is pumped to a tank above ground to feed two Worthington centrifugal Monobloc pressure pumps supplying the plant pressure system.

Operation of the water system is entirely automatic. The well pumps are controlled by the water level through contact electrodes in the above-ground supply tank, and the pressure system is controlled by live pressure.

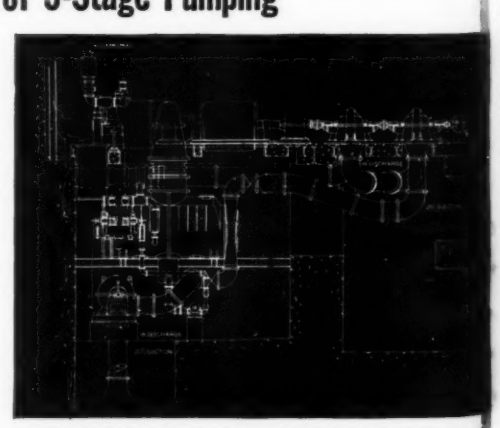
Unusual Design of 3-Stage Pumping

Back in 1928, the South Pittsburgh Water Company installed an unusual Worthington pumping unit for 12 mgd against 370 ft TDH at 1140 rpm. Its success led to installation of a second unit in 1933 for 13 mgd against 370 ft TDH at 1140 rpm. (A third unit for similar service is now under construction.)

These pumping units are really "three stage". The first stage units are 18 in. Worthington motor-driven pumps located in the basement within reach of the water in suction wells. Power for first stage pump motors is furnished from generators on the main floor, forming a part of the pumping units.

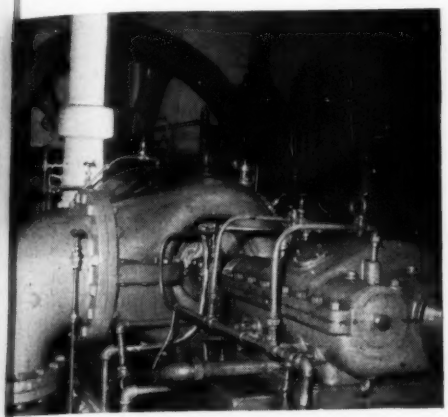
The two main pumping units are on the engine room floor. They each consist of steam turbines direct-connected to generators and two 18 in. Worthington pumps in series.

Power developed by the generators is also used for motor-driven pumps at another station.



15 mgd Worthington Centrifugal pumping unit and 2,000 kw generat[or] South Pittsburgh Water Company

Worthington Pump and Machinery Corporation
•
Harrison, N. J.



Worthington-Moore Steam Turbine driving two centrifugal pumps. Old Worthington steam engine shown in background.

More Power from Smaller Packages Experienced at Canoe Brook

The extent of engineering progress in pumping station equipment is dramatically illustrated by installations of Worthington equipment at the Commonwealth Water Company's Canoe Brook Pumping Station in Summit, New Jersey. This company, an affiliate of the American Water Works and Electric Company Inc., supplies water to the municipalities and 13 communities in that part of New Jersey, and the Canoe Brook Station is one of three pumping stations.

One of the biggest pieces of equipment is a Worthington compound crosshead steam engine and displacement pump installed in 1924. It has a daily capacity of 6,000,000 gallons and is still performing with complete satisfaction. It takes up 50 ft by 25 ft and the flywheel alone weighs 75 tons.

By comparison, the Worthington-Moore turbine recently installed to drive two centrifugal pumps with a total capacity of 5,000,000 gpd, requires much less floor space—the total equipment occupies less than one-tenth the space, but has five-sixths the capacity of the older engine and pump.

Improved simplicity is demonstrated by the turbine combination in which all valves and linkages have been eliminated. With the exception of the gear box, all of the elements contain only one moving part.

Ransome Blue Brute 34E Dual Drum Paver discharging into a batch hopper.

World's Record on Dual Drum Pavers

The ten Ransome Blue Brute Dual Drum Pavers owned by S. A. Healy Company of Chicago give this company what is believed to be the largest number of same-make dual drum pavers owned by a single company.

But none of those machines has ever been used as a paver!

Like the Ransome high-elevated-boom pavers used by the U. S. Government at the Grand Coulee Dam and by many private contractors for building construction work, these machines actually serve as mobile mixing plants.

The combination of fast hydraulically-controlled boom swing and hydraulically-controlled discharge bucket makes it possible to concrete isolated bridge piles and thin walls or to load trucks, batch hoppers, etc., without the dangerous working hazard of a man on top of the form or hopper.

The design gives a clearance of 20 ft. from bucket to ground at the outer end of the boom. The bucket has a self-leveling device and an automatic lock. If the bucket cable should break, the automatic lock holds the loaded bucket at any position on the boom, thus preventing the bucket from running down the boom and crashing into the mixer.

These Blue Brute machines are being used on such jobs as the Chicago Subway system, the Union Stock Yards sewers and the Neversink Dam at Luzon, N. Y.

57-Year-Old Pump Makes "Good Buy"

Worthington Pittsburgh office was recently asked to look up the records of a certain 12x7x10 duplex, piston-pattern, direct-acting pump. The inquirer said this pump was in excellent condition and that he could buy it for $450.00.

A search of the records revealed that that particular pump had been built in 1890!

7-12

XUM

Get Set Now!

To keep streets and highways free of snow and ice with STERLING *"Auger-Action"* Rock Salt

When you think about next winter's storms, do you long for a million dog sleds to take women shopping, children safely to school, people to work? For treacherous snow and ice on pavements cause accidents to pedestrians, cars, trucks,

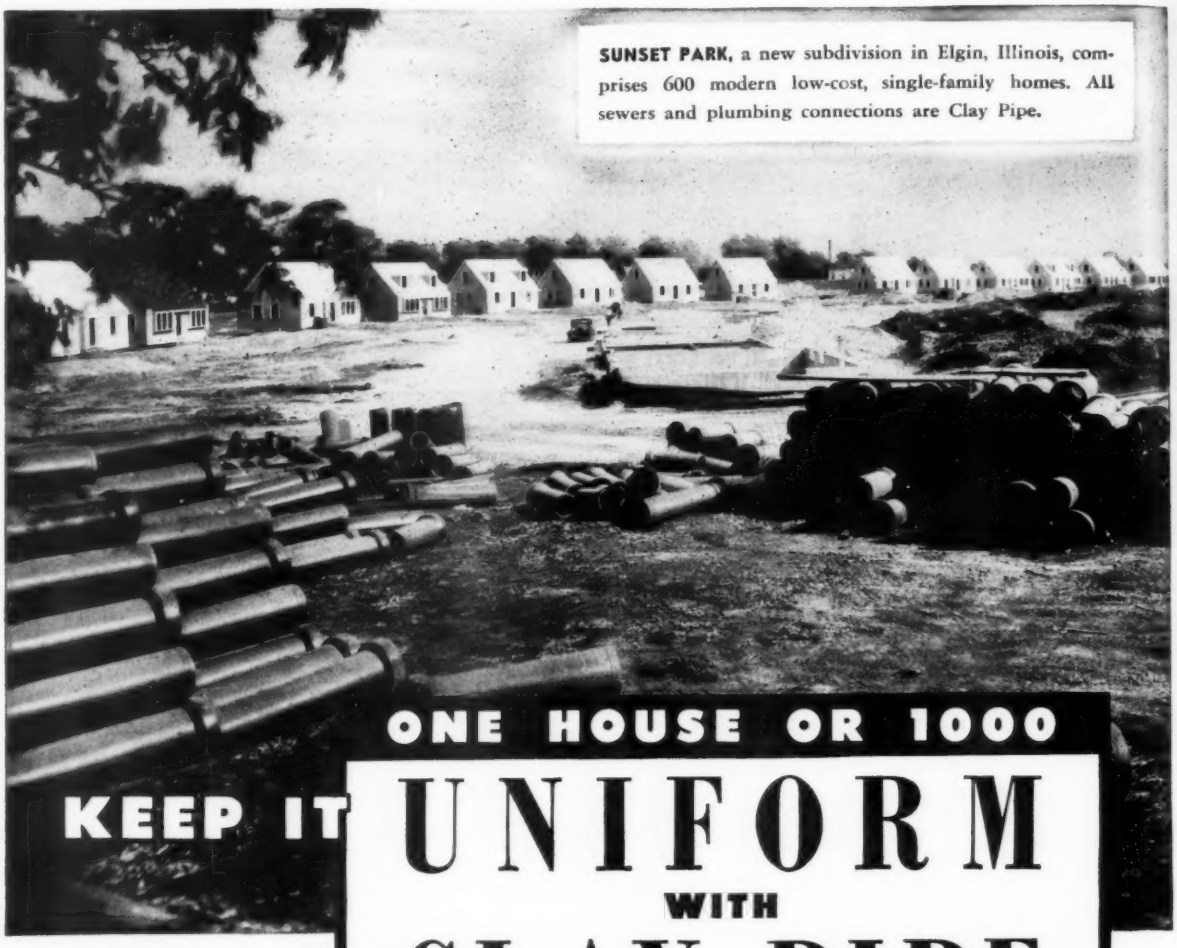
school buses. They hamper business ...cut store sales, slow transportation and essential service. Correct these conditions! Remove snow and ice quickly, inexpensively, with STERLING *"Auger-Action"* Rock Salt

as so many cities, counties, states are doing. Be Prepared - Get your STERLING Rock Salt *Now* - in carloads - bulk or 100 lb. bags. A trained representative will gladly call. *Write Today!*

International Salt Company, Inc. Scranton, Pa.

"PASS the SALT" to remove snow and ice

STERLING
Auger-Action
ROCK SALT



SUNSET PARK, a new subdivision in Elgin, Illinois, comprises 600 modern low-cost, single-family homes. All sewers and plumbing connections are Clay Pipe.

ONE HOUSE OR 1000

KEEP IT

UNIFORM

WITH

CLAY PIPE

SEWER connections are an important part of the over-all sanitary system, and deserve to be made of the same high quality of materials as the main lines. 89% of all sewer mains are Clay Pipe!* The advantages of Clay Pipe are responsible for its preference by leading sanitary engineers. Nine times as much Clay Pipe as any other material is used by American municipalities. The advantages of Clay Pipe for sewer systems make it the best material for connections.

NATIONAL CLAY PIPE MANUFACTURERS, INC.

111 W. Washington St., Chicago 2, Ill.
522 First National Bank Bldg., Atlanta 3, Ga.
1105 Huntington Bank Bldg., Columbus 15, Ohio
571 Chamber of Commerce Bldg., Los Angeles 15, Calif.

* **CLAY PIPE** keeps entire sewer systems uniform. A recent nationwide survey proves that Clay Pipe is the choice for nine out of ten sewers. Engineers in 123 cities report that of 37,219 miles of sewers in their communities, 33,168 (89%) are Clay Pipe.

CLAY PIPE NEVER WEARS OUT!

CLAY PIPE

C-347-2

FAIRBANKS-MORSE POMONA
VERTICAL TURBINE PUMPS
WATER-LUBRICATED:
OPEN IMPELLERS.
OIL LUBRICATED:
CLOSED IMPELLERS.
You can take your choice at the "BIG STORE"...
The "Big Store" is an American institution, where a man can get a better buy from a broader choice. That's why most buyers go to a Fairbanks-Morse-Pomona dealer for their vertical turbine pumps.
They know that these dealers are not restricted in their recommendations. They know that they'll get impartial help in buying the right pump.
For instance, Fairbanks-Morse offers a choice of oil or water lubrication, open or closed impellers. This is greater surety of getting skilled, unrestricted service in obtaining the pump that is most suited to your particular pumping work.
FAIRBANKS-MORSE
SALES
POMONA
SERVICE
VISIT YOUR NEAREST FAIRBANKS-MORSE-Pomona dealer: Take advantage of the extra value in trading from the "Big Store in the pump industry"!
FAIRBANKS-MORSE
A name worth remembering
DIESEL LOCOMOTIVES • DIESEL ENGINES • MAGNETOS • GENERATORS • MOTORS • PUMPS • SCALES • STOKERS • RAILROAD MOTOR CARS and STANDPIPES • FARM EQUIPMENT

WHOOSH

and it's clean!

Yes, the powerful hole-cleaning ability of the Gardner-Denver S55 Sinker frees the deepest holes of cuttings—instantly! But that's only one reason this 55-pound Gardner-Denver drill is so popular. Powerful four-pawl, rifle bar rotation gives it greater drilling capacity—perfect balance makes it easy to handle. With its fast performance and air economy, users call it the most efficient 55-pound sinker on the market.

All Gardner-Denver products have *special features* which make them a better buy for construction work. For complete information about the products shown on this page, write Gardner-Denver Company, Quincy, Illinois.

GARDNER-DENVER

SINCE 1859

1 This Gardner-Denver B87 Paving Breaker has a new safety catch that works like a "safety" on a gun to prevent accidental opening of the throttle. Easily converted to a sheeting driver.

2 Here's a champion tamper for fast, mechanical, backfill compacting. It's easy to walk over the fill—the valve and exhaust won't freeze in cold, damp weather. An integral oil reservoir assures complete lubrication.

3 Where ground is rough and extreme portability a "must," use the Gardner-Denver Universal Drill Mounting. It's fully adjustable for down holes, toe holes or line drilling—it's light and easily moved.

Save...

Time, Money and Labor in making pipe joints

« « « The only field equipment necessary to make a Universal Cast Iron Pipe Bolted Joint is a Ratchet Wrench.

by using

UNIVERSAL
CAST IRON PIPE

(PIPE and JOINT are ONE)

Outstanding Advantages:

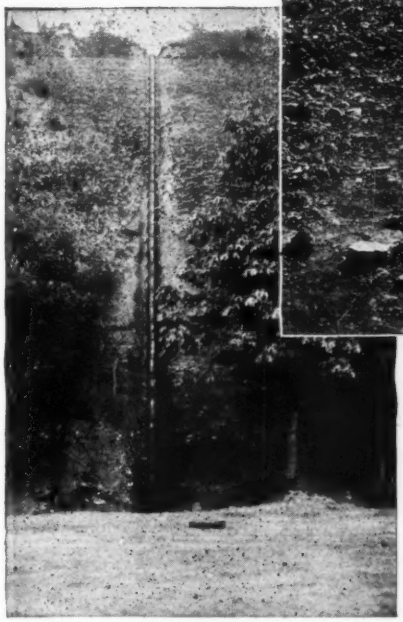
1. *No calking or pouring of lead or lead substitutes. No gaskets used.*
2. No bell holes to dig. Can be laid in a narrow trench. Cost of wide trenching is eliminated.
3. *Can be laid with SPEED. Easier and cheaper to install because only two bolts need to be inserted in the lugs, tightened with a ratchet wrench (the only tool needed), and the completed joint is made in a few minutes. Experienced workmen are not needed.*
4. Nothing to deteriorate; nothing to work loose; no leakage; no maintenance cost.
5. Flexibility: Universal pipe is very flexible. It withstands expansion, contraction, unequal settlement, vibration and shock, and electrolysis. Many curves are laid with straight lengths and do not need special fittings.
6. *Universal pipe can be laid on rocky soil, under water and in sub-zero weather.*

Specify UNIVERSAL PIPE for water mains and sewers

Furnished in hot tar dipped, cement lined, and enameline lining.

Quick service to customers: By rail, truck or water from our foundries and warehouses located from coast to coast.

THE CENTRAL FOUNDRY CO.
386 FOURTH AVENUE, NEW YORK 16



Above *All straight lengths of Universal pipe in this curve.*

At left *16" pipe laid on a 45-degree slope. Note deflection at top to level ground without fittings.*

↓ USE THE COUPON ↓

DEPT. C

THE CENTRAL FOUNDRY COMPANY
386 Fourth Avenue, New York 16, N. Y.

I am interested in SAVING LABOR, TIME, MONEY and EQUIPMENT in pipe-laying. Send me the UNIVERSAL catalog.

Name .....

Position .....

Address .....

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for DUSTPROOFING UNPAVED ROADS

SOLVAY
TRADE MARK REG. U. S. PAT. OFF.
CALCIUM CHLORIDE

Clean
Odorless Colorless
Low Cost Easy to Use
Saves Surfacing Materials

SOLVAY SALES CORPORATION
Alkalies and Chemical Products Manufactured by The Solvay Process Company
40 Rector Street New York 6, N. Y.

Cast Iron Pipe

PLAIN CAST OR SPUN CENTRIFUGAL

Cast Iron Pipe and Special Castings, Bell and Spigot, Flange, Flexible Joint, Culvert, Milled and Plain End Tubes, Cylinders, Flanged and Bell and Spigot Fittings, High Pressure Fire Service Pipe, Warren Short Body Specials, Threaded End Pipe.

Size 2 to 84-inch

Pipe manufactured in accordance with standard specifications adopted and approved by water works associations and engineers.

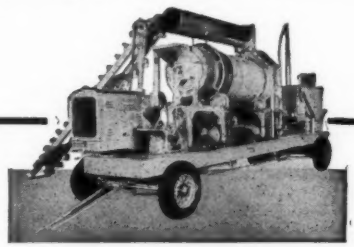
Warren Foundry & Pipe Corp.
11 Broadway, New York City

Warren Pipe Co. of Massachusetts
75 Federal Street, Boston, Mass.

FLINK Self-Feeding Material Spreader

Spreads sand, cinders and all other granular materials. Fits any dump truck as a replacement end gate. Does not limit use of truck to spreading alone. For ice control, resurfacing, seal coating, dust control, and roadwork of all kinds. Spreads full or half width of street, forward or backing up. Hydraulic drive and rear wheel chain drive models. Controlled from cab. Write for literature. *For name of distributor near you, write*

FLINK COMPANY
Dept. AC, Streator, Illinois



PORTABLE ASPHALT PLANTS

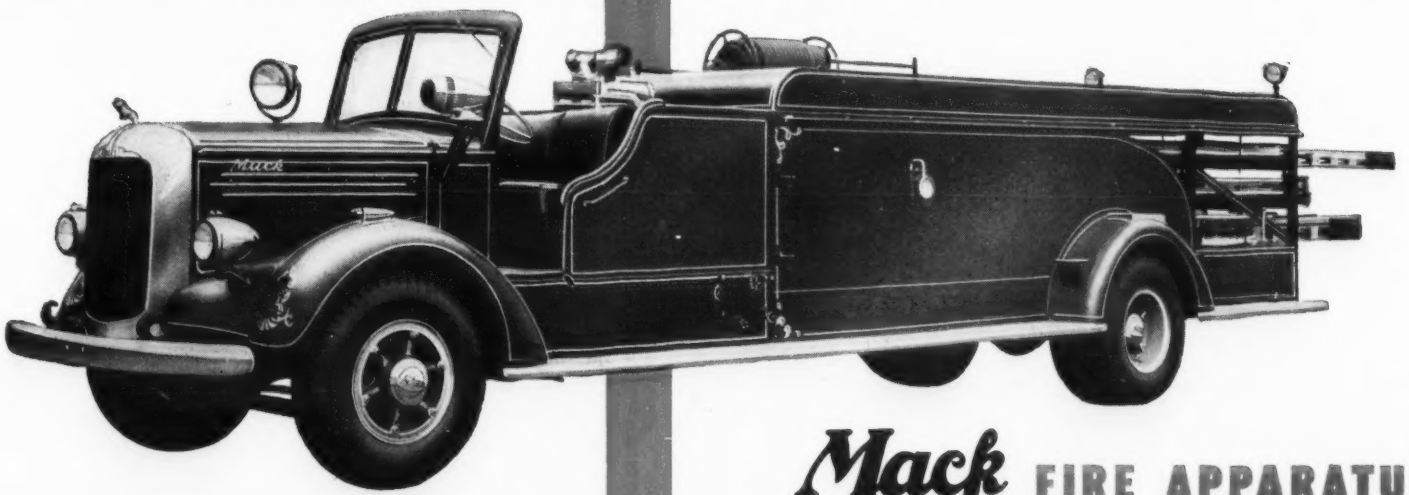
Write for Catalog

Elkhart **White Mfg. Co.** Indiana

NO MACK TIMING GEAR HAS EVER WORN OUT....

Mack timing gears are different from the timing gears in any other fire apparatus. Made in our own shops, they are drop-forged, case-hardened, and generator-ground. The teeth are tetrapoid in form, for greater quietness, strength and durability. In 33 years, not one of these timing gears has ever had to be replaced because of wear.

Such attention to design and manufacture is found in every part that goes into precision-built Mack Fire Apparatus. It is why in over 1,000 fire departments Macks are relied upon for greatest durability as well as performance. You get longer life *out* of Macks — because we put longer life *into* them.



Mack Type 19 City Service Truck — one of many Macks serving San Antonio, Texas

Mack FIRE APPARATUS

Mack Manufacturing Corporation, Fire Apparatus Division, Long Island City 1, New York, N. Y.

Factory branches and dealers in all principal cities. In Canada, Mack Trucks of Canada, Ltd.

5281

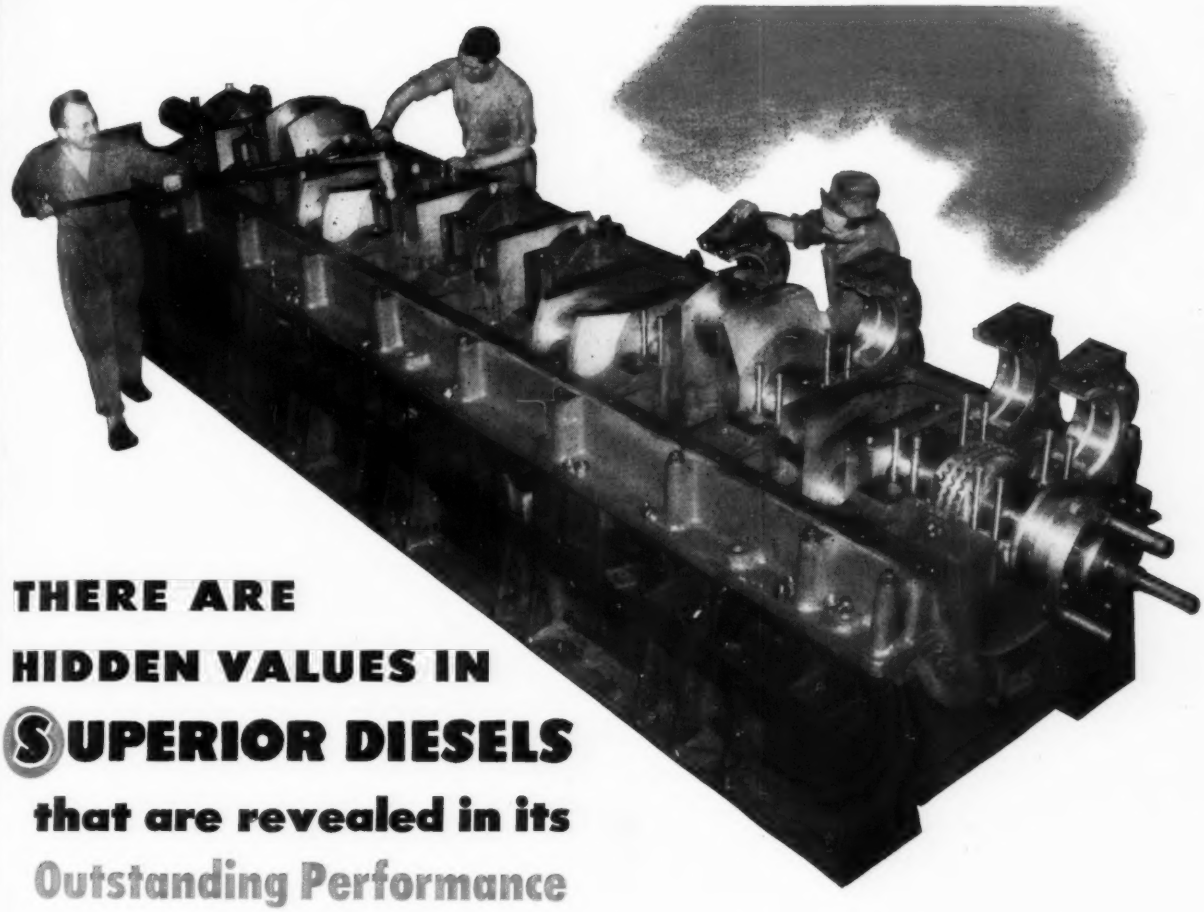
TRIPLE COMBINATION PUMPERS—500 TO 1250 GALLONS...SQUAD WAGONS...CITY SERVICE AND QUADRUPLE COMBINATION LADDER TRUCKS

Original Woodcut by Lynd Ward

The modern community uses cast iron pipe in more ways than is generally realized. In addition to its better known use for water, gas and sewer mains in the streets of a community, U. S. Cast Iron Pipe is also used to furnish some or all of these utility services to such facilities as airports, golf courses, swimming pools and parks. U. S. Cast Iron Pipe is widely used, too, in water filtration and sewage treatment plants.

U.S. cast iron PIPE

U. S. PIPE & FOUNDRY CO.
General Offices: Burlington, N. J.
Plants and Sales Offices throughout U.S.A.



THERE ARE HIDDEN VALUES IN SUPERIOR DIESELS that are revealed in its Outstanding Performance

You can look to Superior Diesel Engines for outstanding performance. Skilled craftsmen make sure of that. Using precision tools and methods they build brute strength and stamina into every engine.

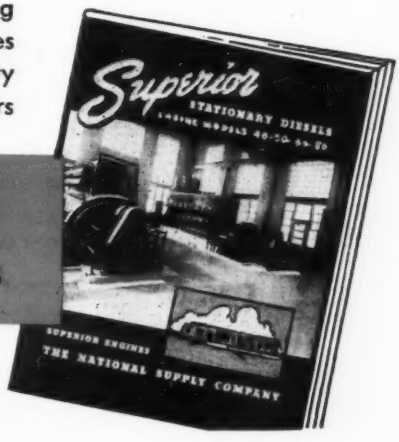
To give Superiors this extra value, no detail is overlooked. The crankshaft bearing supports are a good example of the painstaking care that marks every manufacturing step of these tough engines.

Bearing supports are bored in line to close tolerances. This permits the use of precision bearing shells for the crankshaft journal and eliminates shimming for bearing clearances. The desirability of this feature has been proved for many years in automotive engine practice. It provides a valuable maintenance advantage because parts fit exactly . . . slip into place easily . . . and there are no delays or errors caused by outmoded cut and try methods.

One of our field engineers will be glad to point out all the hidden advantages that make Superior Diesels an outstanding value. Just write and tell us when he can call.

Superior DIESEL

SUPERIOR ENGINES DIVISION OF
THE NATIONAL SUPPLY COMPANY
Plant and General Sales Office: Springfield, Ohio



Send for this Booklet

A new 28 page booklet, "Superior Stationary Diesel Engines" is just off the press. It's packed with facts that tell *how, when and why* Superior Diesel Engines can help you build profits. Write for your *free* copy today.

DE LAVAL

Compressors for Sewage Plant Service

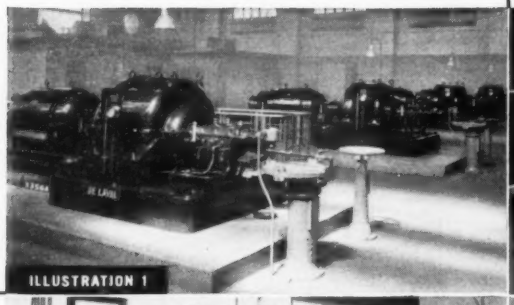


ILLUSTRATION 1

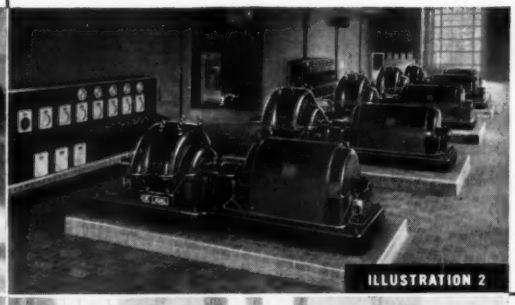


ILLUSTRATION 2

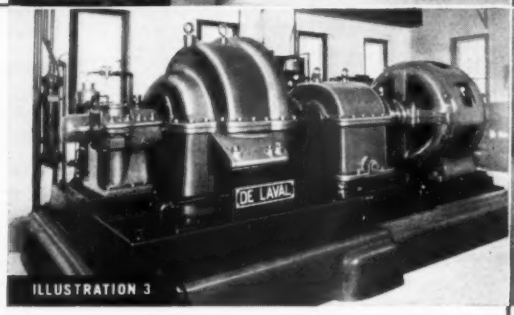


ILLUSTRATION 3

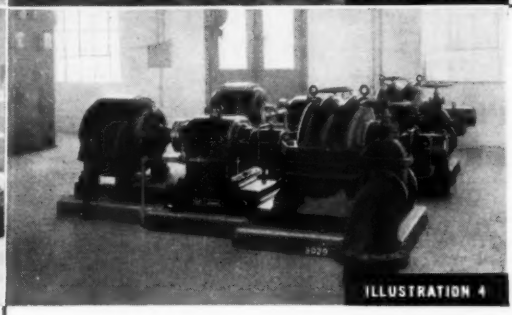


ILLUSTRATION 4

1. FOUR DE LAVAL COMPRESSORS OF 10,000 CFM CAPACITY AT 7 PSI installed at the Bowery Bay Sewage Treatment Plant, New York, N. Y.

2. DE LAVAL COMPRESSORS AT CLEVELAND. Two are rated at 40,000 cfm against 7.4 lb. gage at 3560 rpm and two at 25,000 cfm.

3. TWO-STAGE COMPRESSOR in activated sludge disposal plant at Houston, Texas. This unit has been in service for more than 19 years, operating 99% of the time.

4. TWO DE LAVAL GEARED TURBINE COMPRESSORS supplying 3000 cfm each at 8 psi for sewage aeration.

May we give you the benefit of our experience in figuring your compressor requirements?

Atlanta • Boston • Charlotte • Chicago • Cleveland • Denver
Detroit • Edmonton • Helena • Houston • Kansas City • Los Angeles
New Orleans • New York • Philadelphia • Pittsburgh • Rochester
St. Paul • Salt Lake City • San Francisco • Seattle • Toronto
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DE LAVAL STEAM TURBINE CO.
TRENTON 2, N. J.

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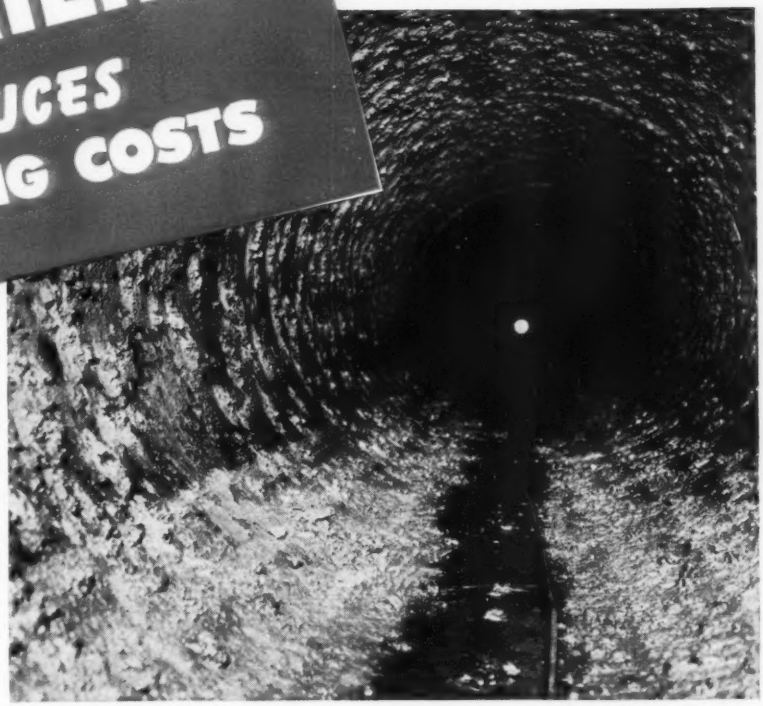
TURBINES • HELICAL GEARS • WORM GEAR SPEED REDUCERS • CENTRIFUGAL PUMPS • CENTRIFUGAL BLOWERS AND COMPRESSORS • IMO OIL PUMPS

CENTRILINE REDUCES PUMPING COSTS

▶▶▶▶ WRITE TODAY FOR THE NEW CENTRILINE CATALOG

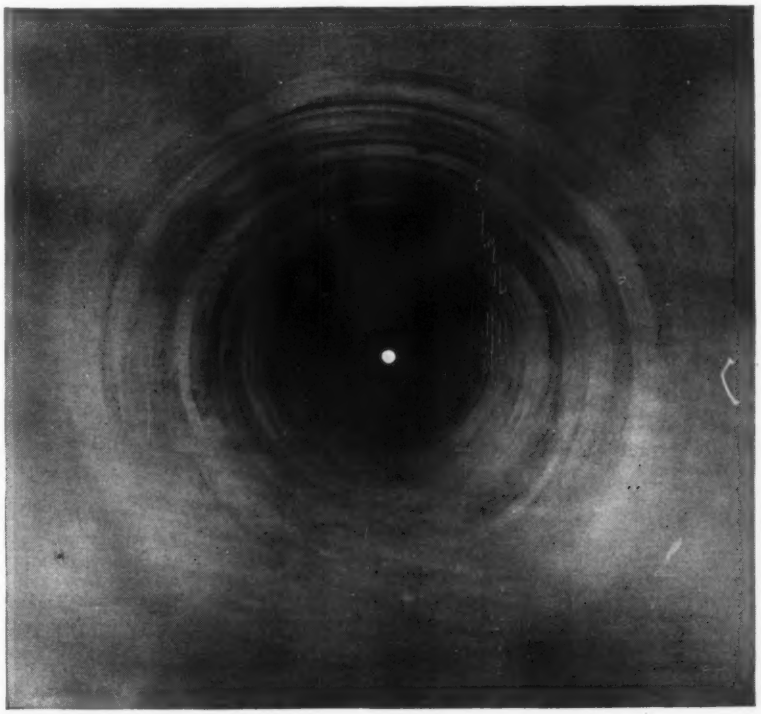


▶ PIPE LINING FACTS NO. 2 ◀

HIGH CARRYING CAPACITY means low pumping costs. Centriline, by assuring perpetually sustained high carrying capacity, keeps the pumping expenditure a low item on the community budget.

Protective cement mortar linings, as applied by Centriline, are continuous, dense, smooth, and without variation in quality. This ever-smooth surface permanently resists corrosion and tuberculation so that pumping expense and depreciation costs go down; coefficient of flow and useful life increases!

Whether old mains are losing efficiency or new projects are planned it is wise to consider Centrilining for the sake of the municipal budget. Our competent staff of hydraulic engineers is ready to assist you.



CENTRILINE CORPORATION

140 CEDAR STREET • NEW YORK 6, N.Y.

CEMENT MORTAR LININGS FOR WATER MAINS

Centrifugally Applied In Strict Conformity with A.W.W.A. Specifications

Troubles haunted Mayor Botts. Like most public servants, he couldn't seem to please everybody. But in nearby Centerville, he heard the people were very pleased about something. So Botts approached his rival, the mayor of Centerville. . .

BOTTS: What have you been doing to win this unusual public favor?

RIVAL: (proudly) We brought soft water to Centerville —it's wonderful!

BOTTS: (amazed) What, contented constituents from soft water? I've got to see that!

RIVAL: (taking Botts' arm) Come on—I'll prove it.

MRS. S: (over the weekly wash) Soft water? See for yourself—look at my whiter, cleaner clothes . . . and it saves soap, lots of soap!

BOTTS: (to himself) The women must love it!

MR. S: (from bathtub) Ah, yes . . . bathing and shaving are almost fun with soft water. And it saves plumbing repairs and fuel costs.

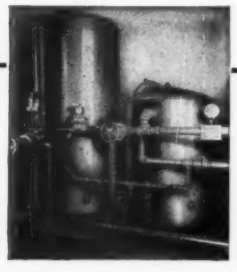
BOTTS: (to rival) And the men like it too.

GRANDMA S: (washing dishes) See how these dishes sparkle. That's because there are no greasy soap curds.

BOTTS: (shouting) Sensational!!!

At last, Mayor Botts learned to please everybody—a Refinite municipal soft water plant, of course! What happened? Well, the Council caught his enthusiasm and voted soft water unanimously. Everyone is pleased with Botts.

Write for information on soft water for your town.



The Refinite Corporation

REFINITE BUILDING • OMAHA NEBRASKA

ANTHRAFILT

(Reg. U.S. Pat. Off.)

A Filter Medium For All Purposes

Has outstanding advantages over sand and quartz media:

1. Length of filter runs doubled
2. Only about one-half as much wash water required
3. Less coating, caking or balling with mud, lime, iron or manganese
4. Filters out of service less because of shorter wash cycle
5. Better removal of bacteria, micro-organic matter, taste and odor
6. Increased filter output with better quality effluent
7. Not just the top portion, but the entire bed, aids in filtering
8. Can be used in all types of filters using a filter medium
9. A perfect supporting medium for synthetic resins
10. An ideal filter medium for industrial acid and alkaline solutions
11. Decidedly advantageous for removal of fibrous material as found in swimming pool filters

Additional information, recommendations and quotations furnished upon request by

PALMER FILTER EQUIPMENT COMPANY

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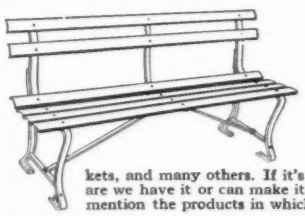
Engineers and Sales Agents

REPRESENTING —

ANTHRACITE EQUIPMENT CORP.

Anthracite Institute Bldg., Wilkes-Barre, Pa.

Stewart Iron and Wire Products for All Types of Public Property



They comprise: Chain Link Wire and Iron Picket Fences and Entrance Gates; Wire Mesh Partitions; Steel Folding and Sliding Gates; Wire and Iron Window Guards; Plain and Ornamental Iron Railings; Bracket and Pier Lanterns; All Steel Settees (illustrated); Flagpoles; Bronze Tablets; Wire Trash Baskets, and many others. If it's made of iron or wire, chances are we have it or can make it. When writing for information mention the products in which you are especially interested.

Stewart IRON and WIRE FENCES

THE STEWART Iron Works Co., Inc.
1421 Stewart Block
CINCINNATI 1, OHIO

PROPER HOUSE NUMBERING

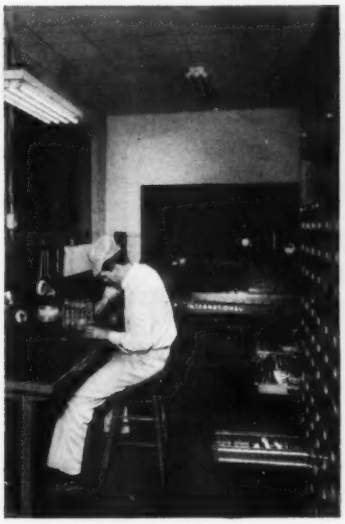
ADOPTED BY MUNICIPALITIES

Premax Stamped and Embossed Metal House Numbers have been generally approved because of their extreme legibility and permanence.

Premax Products

Premax Stamped-Steel Co., Inc., 3838 Highland Ave., Niagara Falls, N. Y.

International distributors maintain complete stocks of parts under a perpetual inventory control. This, plus nearby International parts depots, assures prompt supply of any needed part.



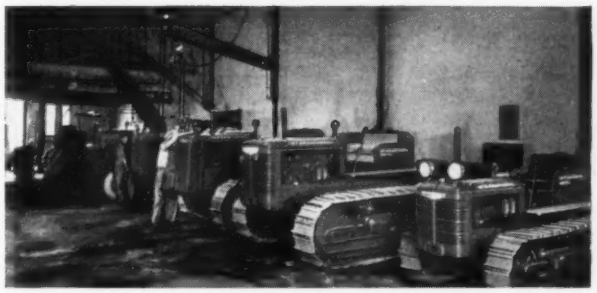
Dust-proof rooms are used for cleanliness in handling precise work on Diesel fuel systems.

NATION-WIDE SERVICE and PARTS FACILITIES keep INTERNATIONAL Power at peak efficiency

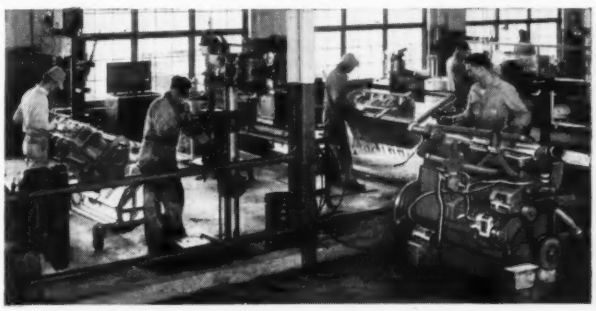
International Industrial Power Distributors throughout the nation are superbly equipped to service and maintain International tractors and International-powered equipment.

Keeping "down time" to a minimum is the function of this nation-wide parts and service network—so that Internationals may produce better profits for their owners through greater dependability and longer operating life.

Depend on your International Industrial Distributor for your equipment and service requirements.

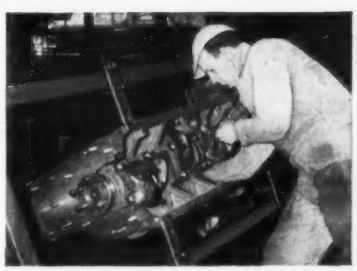


Equipment mounting is done under ideal circumstances as in the distributor's storage building shown here.



Factory-trained mechanics, using modern fixtures and tools, make sure of factory-level servicing, repairing and rebuilding of International engines. The engine department of a distributor's shop is shown above.

Up-to-the-minute fixtures speed up engine work.

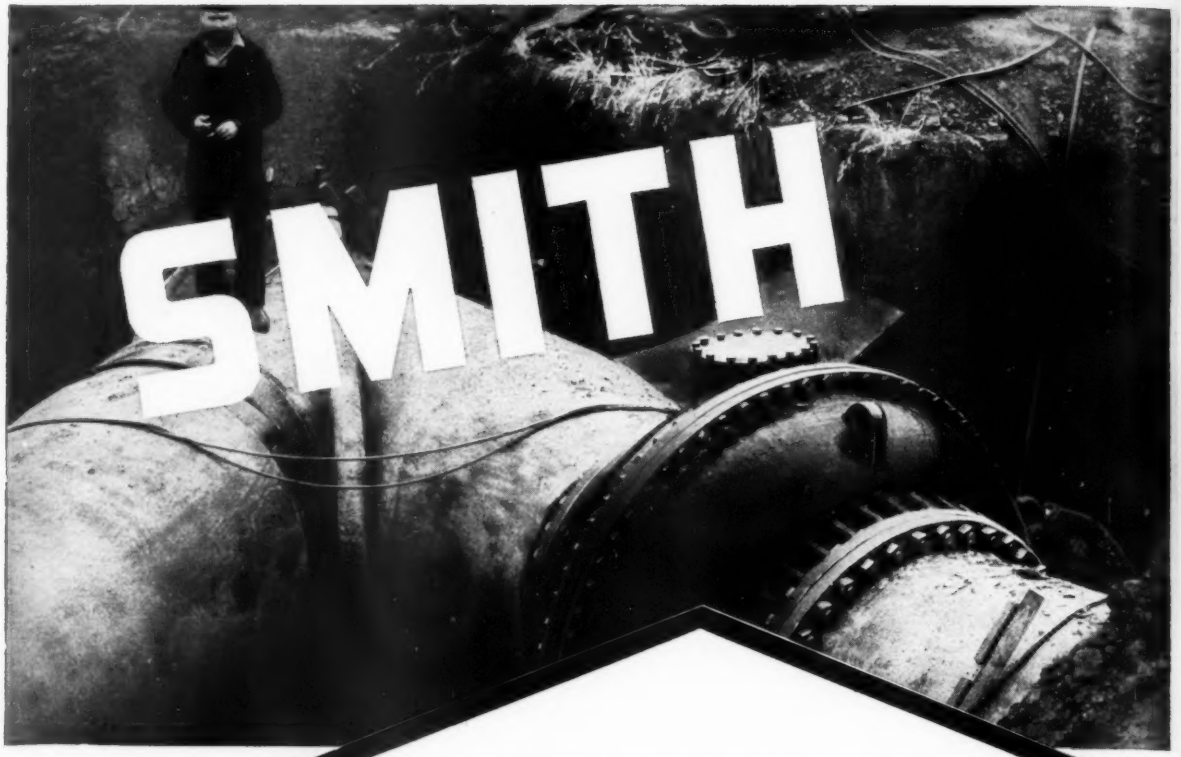


Industrial Power Division
INTERNATIONAL HARVESTER CO.
180 North Michigan Ave., Chicago 1, Illinois

INTERNATIONAL HARVESTER

INTERNATIONAL POWER

CRAWLER AND WHEEL TRACTORS • DIESEL ENGINES • POWER UNITS



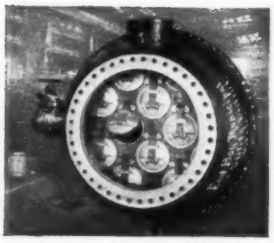
MULTI-PORT CHECK VALVES END WATER HAMMER RISK

AT EAST BAY, CALIFORNIA

To avoid water hammer resulting from shutdown of pumping units employed to boost the capacity of a gravity feed line, this 54″ Smith Multi-port, disk check valve was installed in a by-pass around the pump. When pumps are operating, greater pressure on the downstream side holds the valves closed. When pumps are suddenly stopped, the downstream pressure becomes less than the upstream pressure and the multi-port valves open, permitting aqueduct flow to continue at a gradually diminishing rate.

Large high pressure, multi-port check valves are but one of many Smith products furnished to the water works industry. See list below.

25



Smith 54″ cast steel, multi-port, check valve – 200 lb. working pressure.

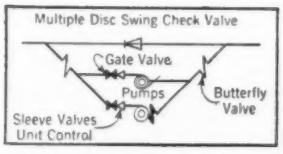


Diagram showing location of the multi-port valve.

FIRE HYDRANTS
GATE VALVES
CHECK VALVES
INSERTING VALVES
TAPPING SLEEVES AND VALVES
WATER SERVICE BRASS GOODS

THE A. P. SMITH MFG. CO.

EAST ORANGE, NEW JERSEY

FLOOR STANDS
INDICATOR POSTS
TAPPING MACHINES
INSERTING MACHINES
PIPE CUTTING MACHINES
CORPORATION TAPPING MACHINES

Drott Bullclam Shovel Method of Sanitary Fill is

100% ANSWER TO DISPOSAL PROBLEM

For Historic Natchez, Mississippi

Natchez Pilgrimage
The old South still lives in Natchez. Tours are annually held to view this city's many historic mansions.

Says B. C. Jordan, Jr., *City Engineer of Natchez:*

"**The City** had a serious disposal problem. The incinerator was too small and too old to handle more than one fourth the trash generated. It was in such condition as to be dangerous to operate. The City and its private citizens had, by necessity, been dumping trash in the numerous ravines (called locally, "bayous") that run through the city. This caused a very unsanitary and unsightly condition. The sanitary fill has proven to be the 100% solution. It permitted us to pass a "no dumping" ordinance and is the first step in a clean up campaign. We are now taking care of more than four times as much trash at the fill as previously at the incinerator at less cost. The initial investment at the fill is about one eighth the cost of a new incinerator. At the end of a day's filling and covering there isn't a piece of paper visible to indicate that this is a trash dump. The Navy is planning to build an armory within 300 feet of the fill."

YOU TOO, will find this clean, modern and economical method is the right answer to your refuse disposal problem. We will gladly give you all the facts.

NATCHEZ SANITARY FILL. Drott Bullclam Shovel shown digging trench and compacting refuse. All operations are handled by this one machine — compacting, digging, moving dirt, dumping and covering. Note view of completed section of fill — clean, level, attractive!

Operated by DROTT POSITIVE CLOSED HYDRAULIC SYSTEM • SMOOTH • QUICK • DEPENDABLE. Keeps dirt and air out . . . keeps oil in! Used successfully on Drott equipment for many years.

FREE

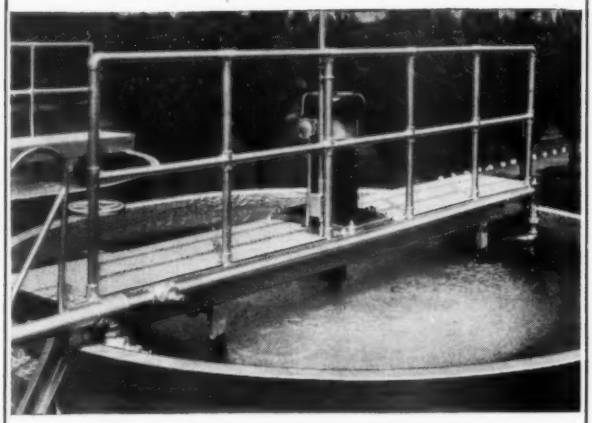
Get the Complete Story! Send for This Book—"Answer To Your Waste Disposal Problems . . . With the Drott Bullclam Shovel."

DROTT
UNIVERSAL
EQUIPMENT

DROTT MANUFACTURING CORP.
(FORMERLY HI-WAY SERVICE CORP.)
4344 N. GREEN BAY AVE. MILWAUKEE 12, WISCONSIN

Ozonation

MAKES WATER
BETTER TASTING,
SPRING-LIKE,
CRYSTAL CLEAR



Ozonation definitely reduces, — generally eliminates tastes and odors caused by industrial pollution, algae and decayed vegetation, thus producing water that is *better tasting, spring-like and crystal clear.*

Ozonation does this without leaving any taste or odor of its own, since ozone is active oxygen — nothing else. Ozonation also has the plus value of being a powerful germicide.

Improved palatability and chemical savings make ozonation economically practical. Write us for information.

WELSBACH

OZONE PROCESSES DIVISION

THE WELSBACH CORPORATION

1500 WALNUT ST. PHILADELPHIA 2

KEEP SEWERS OPEN
with
OK CHAMPION
POWER SEWER CLEANER

OPEN

CLOSED

Town and City officials throughout America are adopting OK CHAMPION Power Sewer Cleaner to keep sewers clean and efficient. Takes roots, dirt, sand, and other debris up from main in one continuous operation. All men work above street level.

Pulling forward opens the jaws that bite into obstructions. Reversing the pull on the bucket automatically closes jaws which hold load pulled back to street level. Write for complete details.

CHAMPION CORPORATION 4716 SHEFFIELD HAMMOND, IND.

"GUNITE" CONCRETE
(Since 1915)

SPECIALISTS IN CEMENT GUN WORK

RESERVOIR LININGS (NEW AND OLD) • CONCRETE AND MASONRY REPAIRS • STEEL ENCASEMENT • FIREPROOFING • STEEL COAL BUNKER, STACK, HOPPER, AND PLATE LINING • SEWER LINING AND REPAIRING • CANAL, DITCH, AND DRAIN LINING.

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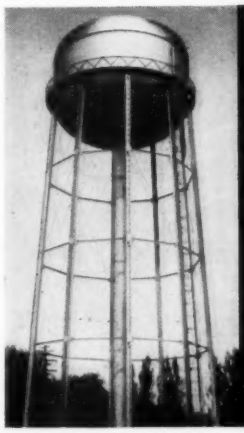

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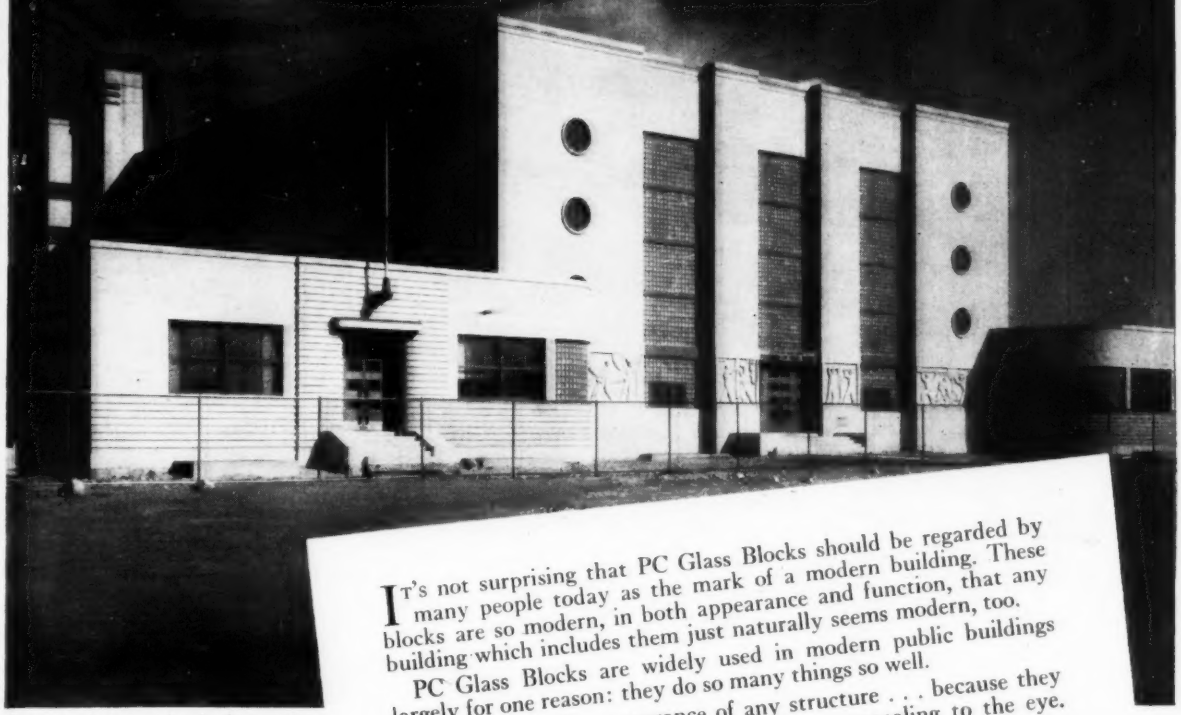
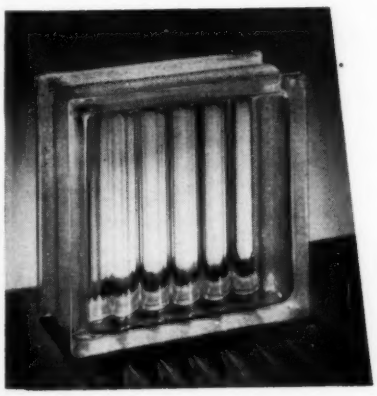
618 Empire Building Rockford, Illinois

THE MARK OF A MODERN BUILDING

PC GLASS BLOCKS



Designed and constructed under the supervison of the Department of Public Works, City of New York. **John Splain**, Commissioner.



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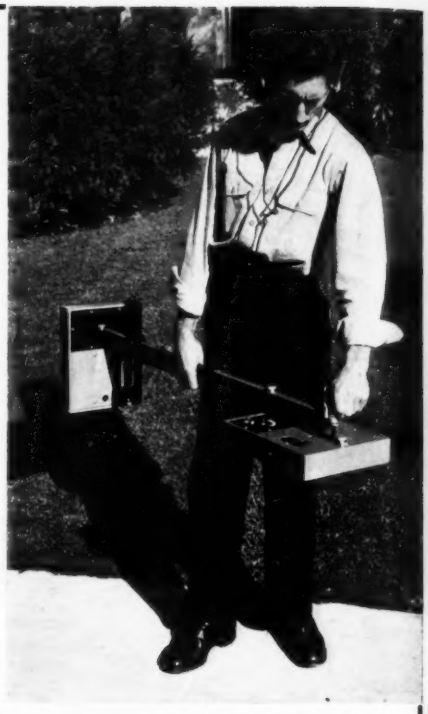

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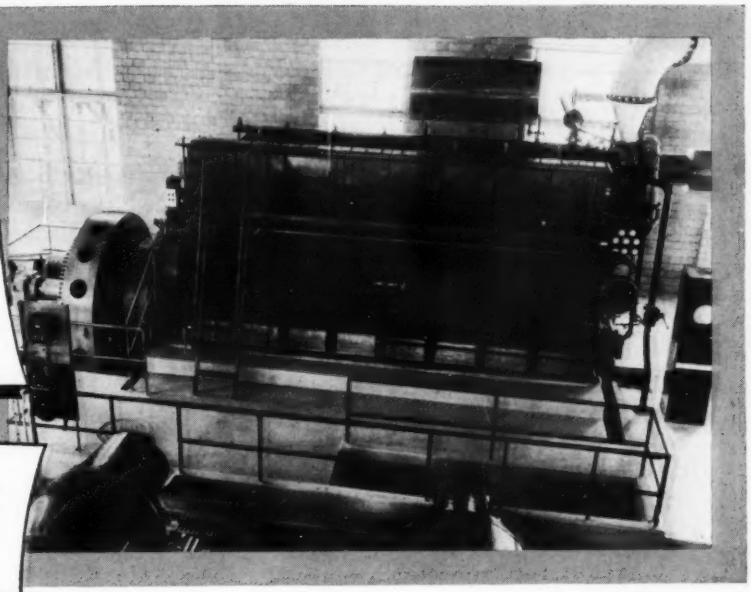

* Developed by this Worthington Supercharged Dual Fuel Diesel Engine, Type SEHGO-8, on acceptance test at the municipal plant, Lamar, Colorado.

* TEST DETAILS: 7050 net Btu per brake horsepower-hour at full load . . . total gas and pilot oil fuels included . . . elevation 3600 ft.

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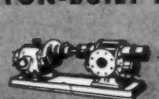

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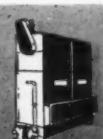

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Mr. Mayor or Manager:

Inaugurated late in 1945, this Service is now being used regularly by nearly 300 cities. It will enable you to receive immediate expert advice and reports on management problems in *your town or city.*

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You write, wire, or telephone for information on what is considered best practice in handling a specific municipal problem, what other cities are doing about it, what the trend is, etc. Over the past three decades ICMA has collected on a nationwide basis a vast amount of information which it now makes available to all cities on a subscription basis.

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1. In addition to replies on specific inquiries, subscribing cities receive from one to 12 subscriptions (depending on size of the city) to the monthly journal *Public Management* published since 1919, and devoted to the improvement of municipal administration.

2. Cities also receive from one to 10 copies of the 1947 *Municipal Year Book*, the authoritative resume of the activities and statistical data for more than 2,000 American cities, published since 1934.

3. One copy each of special information reports issued monthly. Partial list of recent reports:

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Nearly 300 cities in 38 states ranging in size from 1,000 to 400,000 have subscribed to this Service. The number of subscribing cities in selected states are:

California	23	cities	Kansas	10	cities	Ohio	9 cities
Colorado	5	"	Maine	11	"	Texas	27 "
Florida	21	"	Michigan	32	"	Virginia	15 "
Georgia	12	"	Missouri	8	"	Wisconsin	10 "
Illinois	9	"	North Carolina	6	"	Canada	10 "

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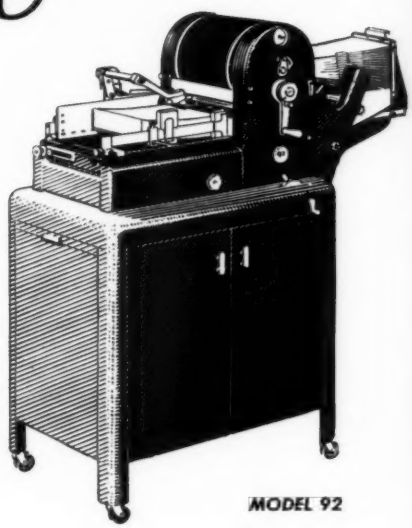
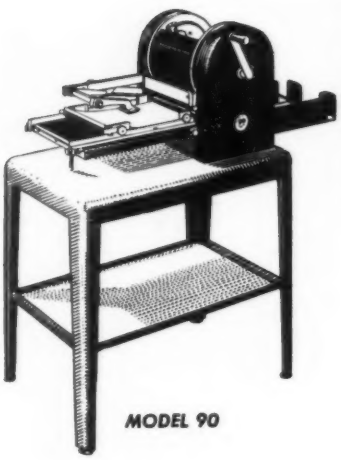


MODEL 92

MODEL 91



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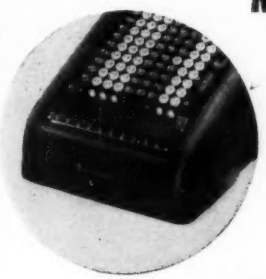

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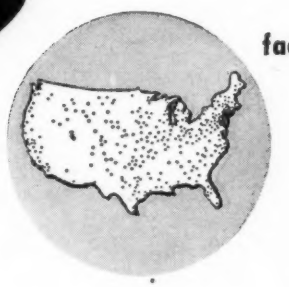

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Takes Work Away From Operator
YET GETS MORE WORK DONE!

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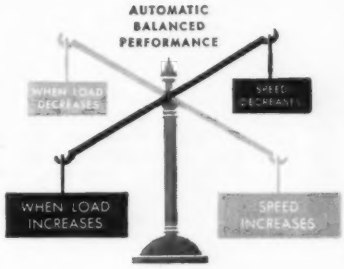

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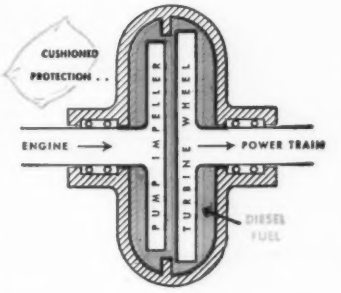
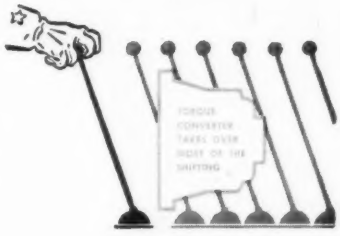


MAKES IT EASIER FOR OPERATOR

No restarting — engine can't be stalled. No constant shifting — torque converter automatically selects the maximum speed in each of the wide speed ranges at which load can be moved. No jolts and shock to tire operator — power flow is smooth and even.

To approach the accomplishment of a torque converter . . . a fluid coupling would be required, plus a transmission with an unlimited number of gear ratios, and an operator with the impossible task of continuously shifting into the right gear at just the right moment — instantaneously.



WHAT THE TORQUE CONVERTER IS

The Twin Disc torque converter in Allis-Chalmers tractors is a remarkably simple mechanism. It consists of only two wheels — impeller and turbine — rotating independently of each other in an oil-filled housing. The impeller is directly connected to the engine, and the turbine to the power train.

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TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

★ *Originator of the Torque-Converter Tractor*

Make Your Repair Dollar Cover More Roadway

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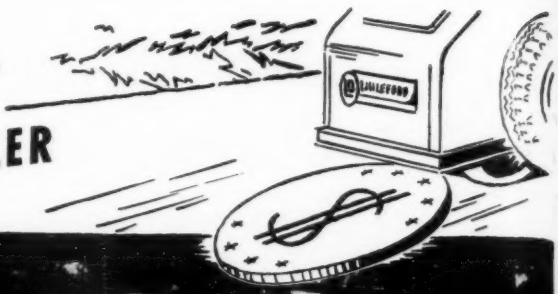

This Littleford No. 155 Trail-O-Roller covers ground like a kid in a baby walker! It makes your dollar do a bigger job because whatever it Rolls is there to stay. Gets to more jobs because it trails safely at any speed. Patented Hydraulic lift converts it easily from rolling to trailing position. Powered by air-cooled engine; has automotive type steering control, heavy duty transmission, machine finished cast main roller. Use Trail-O-Roller for all patch work, shoulder widening, alley paving, airport runways, driveways, parking areas, school yards...*everything!* Write for Bulletin No. 3 today.

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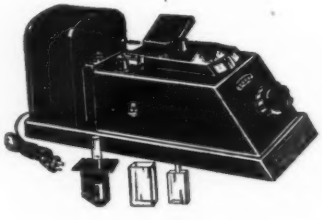

Can be used for any determination in which color or turbidity can be developed in proportion to substance to be determined.

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One Man ELECTRIC CHAIN SAW

The Saw That Cuts Time and Costs

This is it . . . an amazingly light yet rugged and efficient chain saw that will certainly be mighty useful not only for clearing tree damage caused by storms but also for routine jobs . . . a High-Cycle Electric Saw that *one man* can use with ease.

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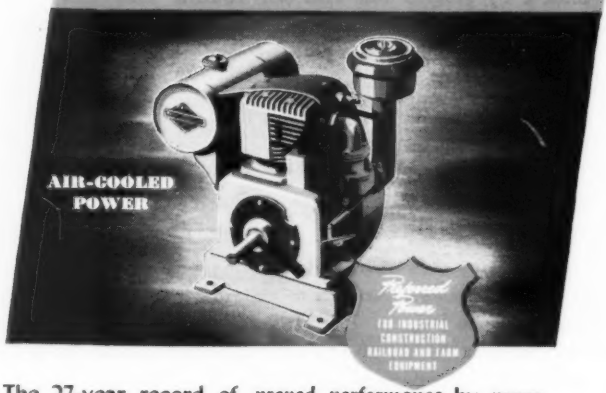
Your assurance of all that is best in gasoline engine performance



The 27-year record of *proved performance* by more than 3 million Briggs & Stratton engines is conclusive proof of the value of long experience. Today's Briggs & Stratton 4-cycle air-cooled engines assure all that is best in dependable, trouble-free operation — because *more experience is built into them* than any other air-cooled gasoline engines.

BRIGGS & STRATTON CORP., MILWAUKEE 1, WIS., U. S. A.

WHY—

The above illustration shows the position of the rubber lining in

Bi-Lateral Fire Hose

when it is held in a flattened position between calls into service. This is why we can save a city one replacement, because the hose will give double the service of any hose constructed under the old method.

— Also —

We can load 25% more on the apparatus-bed, actually making an $8,000 truck loaded with the Bi-Lateral construction cheaper than one priced at $7,000 when loaded with other construction.

BI-LATERAL FIRE HOSE CO.
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The TESTERATE INDICATOR

This instrument takes the guesswork out of setting rates of flow in water meter testing.

*

Indicates instantly and accurately the rate of flow in gallons per minute. Can be used with any type of testing equipment.

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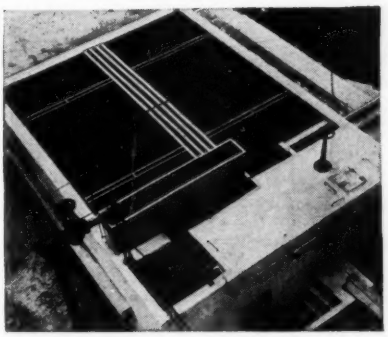
Write for useful and interesting catalog giving complete information.

The FORD METER BOX COMPANY, INC.
WABASH, INDIANA

No. 12

. . . there could be such a *difference* in water!"



PERMUTIT (Spaulding) PRECIPITATOR removes water hardness, dirt and color by the sludge blanket process. This new-design equipment cuts detention time, saves chemicals, takes only half the space of former methods. Present installations handle up to 120,000,000 gallons daily.

SOFT WATER MAKES THAT DIFFERENCE!

SOFT WATER lightens the housewife's work . . . eases washing and cleaning. The home comforts of Permutit softened water mean more leisure, greater happiness and better living for all!

SOFT WATER attracts new capital, new industries since it's a "must" for many manufacturing techniques. Industrialists today are scouting for plant sites in soft water communities!

PERMUTIT* Water Conditioning Equipment is your city's *economical* way to a *prosperous* future!

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Beat old man Winter to the punch!

Now—before frost and snow set in—put your roads in first-class condition with TARVIA* road tar.

There's a correct grade of TARVIA road tar for every type of repair and resurfacing job. All are economical, easy to apply, extra long on service.

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Barrett* Tarvia*
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ROAD TAR

Solves THE LEAF PROBLEM

Troublesome leaves that clog sewers and make driving hazardous are handled efficiently by the Leaf Broom Attachment for the Patrol Sweeper. Leaves are pushed ahead of the Sweeper until there is a large pile, which the Sweeper then drives around. Behind the Leaf Broom, sweeping is going on as usual. A handy lever beside the driver raises and lowers the Leaf Broom.

Your nearby Austin-Western distributor will be glad to tell the whole story of Patrol Sweeper operating efficiency and economy.

AUSTIN-WESTERN COMPANY, AURORA, ILLINOIS, U. S. A.

BUILDERS OF ROAD MACHINERY

Austin Western

SINCE 1859

Rx ANNUAL REVENUE UP $2500 PUMPAGE DOWN 2.2%

• TYPICAL EXAMPLE FROM ANOTHER SMALL TOWN

to offset the difference between a fixed rate . . . . . and rising costs

YOU can't always stop rising costs. You can't UP water rates, except as a last resort. But you can increase revenue by a systematic program of meter testing and repair.

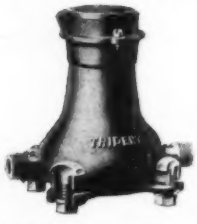
Typical of a number of towns reporting results of a meter-testing program is the case of one small town, which increased revenue over $2500 a year, and at the same time reduced pumpage 2.2%!

Your town may be able to do as well – or better.

Today facts prove that more than 13% of the water used in the average home is used at about ¼ g.p.m. This shows the importance of having your repaired water meters register at least 90% at that rate of flow. Of unaccounted-for water, more is lost through under-registration of meters at low rates of flow than you may realize!

Your Trident representative will be glad to give you the benefit of his experience in connection with modern meter shop operation.

Trident Water Meters



Trident Water Meters are easily and economically repaired, because of their simplicity and because all parts are interchangeable. New modern parts fit old Tridents, even those in service for many years; and a small stock of interchangeable parts will take care of a large number of meters.

NEPTUNE METER COMPANY • 50 West 50th Street • NEW YORK 20, N. Y.
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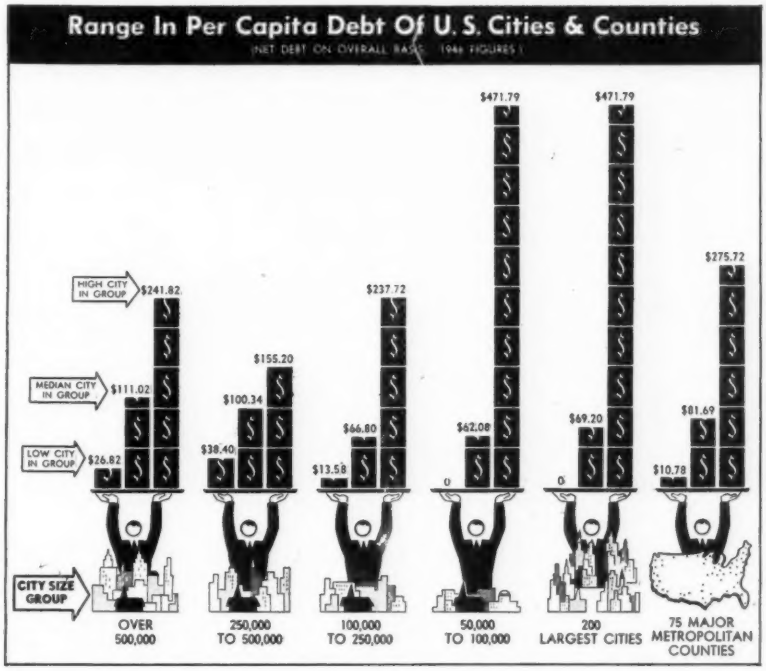
172

Volume LXII Number 9
SEPTEMBER 1947
The American City



COURTESY MUNICIPAL SERVICE DIVISION, DUN AND BRADSTREET, INC.

A Comparison of Municipal Debts

How well can our cities finance their capital requirements?

By FREDERICK L. BIRD
Director of Municipal Research
Dun and Bradstreet, Inc.

THE SHARP increase in municipal borrowing since the end of the war and the large accumulation of necessary and desirable public improvements which remains to be financed call for consideration of how well the nation's municipalities are situated to finance their capital requirements.

Generalization on this question is bound to be misleading because there are almost as many answers as there are political subdivisions. It is easy to understand the feeling of futility in a community which has seen its best days economically, faces dim prospects of increasing its revenues, already has a heavy debt, and yet needs expensive rehabilitation. But a radically different outlook prevails in a growing community with expanding resources, a low and declining debt load, and a revenue system which has a safe margin of unused productivity. With respect to economic capacity to finance public improvements, the situation for the nation's cities, towns, villages, school districts, counties, and other local units of government ranges widely between these extremes.

This wide divergence in economic borrowing capacity is well illustrated by the range in the present debt burdens of the larger American cities, from no debt, or only a negligible amount of debt, in a few fortunate places, to a very formidable accumulation of debt obligations in several at the other extreme. The weight of a city's present debt is by no means the only factor in determining its safe borrowing capacity, but it is a very important factor.

Comparative Data Difficult to Compile

Comparative data on the debt burdens of urban communities are not readily available, because local public borrowing in any given community is usually handled by more than one governmental agency. A taxpayer, therefore, may be contributing to the support of a city debt, a county debt, a school district debt, and even the debts of several special districts. That a great diversity prevails in the official responsibility for local borrowing may be illustrated by the situation in the three large cities of

Baltimore, Philadelphia, and Chicago. The debt of the city of Baltimore represents the totality of the community's local public debt, there being no overlapping local units of government. In Philadelphia two units do the borrowing, the City and the School District. But in Chicago six overlapping local governments have the power to borrow and levy taxes—the City, the Board of Education, Cook County, the Sanitary District, the Park District, and the Forest Preserve District. The situation becomes even more varied if public authorities which have power to borrow but not to tax are included, but consideration is being restricted here to municipal debt secured by the power to tax.

It is only by the use of composite debt figures, therefore, that a community's local public debt load can be ascertained and compared with those of other communities. Additionally, to assure both a true appraisal of the burden of the debt on the taxpayers and a fair basis for comparison, it is necessary to disregard the debts incurred for self-supporting public service enterprises.

Table Shows Composite Debt

The accompanying table shows, on a per capita basis, the median and range of the composite or over-all net debts of the nation's 200 largest cities in 1946. Net, tax-supported debts have been used; that is, in the computations deductions have been made for general sinking funds and for the debts of public service enterprises to the extent that they are self-supporting. The composite figures have been secured by adding to the direct net debt of each city that share of the net debt of each overlapping governmental unit for which the city's taxpayers are responsible. In addition to showing the composite debts on a per capita basis, they have also been related to the cities' assessed taxable valuations adjusted to estimated full taxable value. Both methods of computation lack precision for comparative purposes, but they serve reasonably well for illustrative data. The following table gives figures not only for 1946, but for 1945, which was the recent low point in the municipal debt level; for 1940, immediately prior to the marked downward trend during the war period, and for 1935, when most tax-supported municipal debts were beginning to move downward from their peaks.

Substantial Borrowing Capacity in Most Cities

These figures, and the more detailed figures on which they are based, are reassuring as to the capacity of the majority of the larger U. S. cities to borrow rather substantially for capital improvements; but they also indicate the presence of an unfavorably situated minority which already have as much tax-supported debt as they can cope with successfully. The median, or average, city among the 200 had an over-all net debt of only $69.20 per capita in 1946, down 37% from 1935, and amounting only to 4.7% of the estimated full taxable valuation, or 36% below the ratio for 1935. *If the average city were to double its over-all net debt it would still be in line with what was considered relatively safe even in the acute years of the 1930's depression.*

Although the upper range of debt loads among the 200 cities is undeniably high and burdensome, it is occupied only by a conspicuous few. Only 18 of the 200 had over-all net debts of more than $150 per capita in 1946, and only 19 of the 200 had debt ratios that were 10% or more of estimated full taxable value. While the excessively indebted small minority is likely to be vociferous about its incapacity to borrow, its predicament should not be permitted to obscure the relatively favorable status of the thriftier majority.

MEDIAN AND RANGE, OVER-ALL NET DEBTS

200 Largest U. S. Cities, 1935, 1940, 1945, 1946

	Per Capita			*Ratio to Estimated Full Taxable Value*		
Year	*Low*	*Median*	*High*	*Low*	*Median*	*High*
1935	$23.62	$109.33	$845.95	1.3	7.3	68.2
1940	9.38	94.35	548.89	0.5	6.4	38.9
1945	.....	68.54	482.50	..	4.2	33.7
1946	.....	69.20	471.79	..	4.7	32.0

Three-way Municipal Consolidation Presents Unusual Problems

BILL N. TAYLOR, well-known city manager and consultant to the Charter Commission of Pelly, Texas, is currently engaged in a unique and difficult assignment which should be of interest to readers of THE AMERICAN CITY. Three towns, Baytown, Goose Creek, and Pelly, have been consolidated, which means that their organizations and finances have to be merged, and the various bond issues refunded and consolidated into one. A special element of the complex problem is that Baytown's three separate water districts will have to be combined with the water and sewer departments of Goose Creek and Pelly. Work is in progress on the consolidated area's new city charter, which is to be submitted in December of this year.

The sequence of events which led to the unusual situation follows:

1. Both Goose Creek and Pelly were incorporated places, having a council-manager charter. Baytown was an unincorporated place, its population consisting primarily of employes of a local oil refinery.

2. The leaders of the three contiguous communities decided that a consolidation of the towns should be effected. Thereupon, Pelly annexed Baytown.

3. The people of the three areas voted in February 1947 to consolidate. At the same election, a straw ballot was held, and the electors voted to change the name of the new city to Baytown, and to appoint a Charter Commission for the purpose of drafting a new charter.

4. A special census was taken, and it was determined that Pelly, together with annexed Baytown, has a greater population than Goose Creek. Therefore, the municipality of Pelly absorbed Goose Creek, and until the unification now in progress is completed, the official name will be Pelly. After the charter is adopted, the new municipality will be known as Baytown.

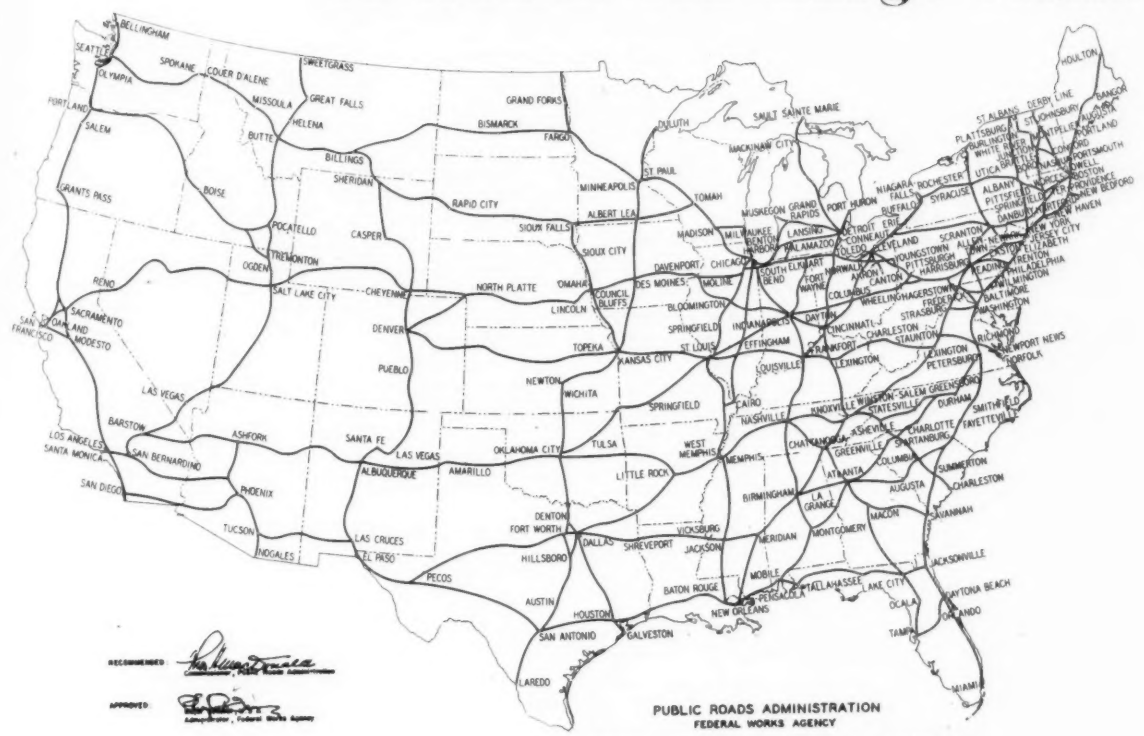
5. In April, the regular municipal election was held and a new city council came into office. The Charter Commission, which is now hard at work, was appointed at that time.

6. A new charter cannot be submitted before December 8, 1947, however, since the present Pelly charter was adopted December 7, 1945, and the Constitution of Texas requires two years to elapse before an amendment or a new charter may be voted upon.

Britain's New Planning Act

The controversial Town and Country Planning Bill was enacted into law in Great Britain on August 6. An analysis of its far-reaching provisions, which are expected to be put into operation early in 1948, appeared in the February 1947 issue of *The American City*, together with comments on the measure by four British leaders in various municipal fields.

National Highway Network to Reach 182 Large Cities


PUBLIC ROADS ADMINISTRATION
FEDERAL WORKS AGENCY
NATIONAL SYSTEM OF INTERSTATE HIGHWAYS
SELECTED BY JOINT ACTION OF THE SEVERAL STATE HIGHWAY DEPARTMENTS
AS MODIFIED AND APPROVED
BY THE ADMINISTRATOR, FEDERAL WORKS AGENCY
AUGUST 2, 1947

A NEW interstate throughway system has recently been mapped by the various state highway departments in cooperation with the Public Roads Administration. The system comprises the most heavily traveled highways in the present federal-aid system and includes extensions of the system through urban areas.

The system contains 37,681 miles of highways, including 2,882 miles of urban thoroughfares. Additional urban circumferential and distributing routes are to be designated later, and 2,319 miles have been reserved for these routes. The network reaches 42 state capital cities and will serve directly 182 of the 199 cities in the country having a population of 50,000 or more persons.

Expressways for Large Cities

In many large cities, depressed or elevated expressways will be built, making possible city travel at an average speed of from 35 to 45 miles per hour without stops for traffic signals and free of interference by cross traffic. Depressed portions of expressways will be supplemented by parallel frontage roads for local traffic, and bridges will be constructed at intersections to serve cross traffic.

In recommending routes for inclusions in the system, state highway departments were governed by provisions of the Federal Aid Highway Act of 1944. The act authorized $500,000,000 in each of the three fiscal years following the end of the war to assist the states in developing a three-billion-dollar highway program. The sum of $225,000,000 was set aside from the authorized annual appropriation for improvements on highways in the regular federal-aid system; $125,000,000 was made available for urban sections of the system only, including expressways and circumferential and distribution routes; $150,000,000 was earmarked for state systems of secondary roads. No specific sum was provided for development of the national interstate system; however, since the system is made a part of the federal-aid system the amounts provided are available for this purpose.

Design standards for the system call for four-lane divided highways wherever the traffic volume is 800 vehicles in peak hours. Traffic lanes 12 feet wide are recommended on all heavily traveled routes. Where traffic density exceeds 3,000 vehicles in peak hours, elimination of all cross-traffic at grade crossings is advocated. The American Association of State Highway Officials identifies "peak hour traffic density" as the 30th highest hourly density of the year.

Construction Now Under Way

Work already has been started on improvements on sections of the federal-aid system included in the national inter-state system, for which plans had been completed prior to V-J Day. Commissioner Thomas H. MacDonald, heading the Public Roads Administration, emphasizes, however, that development of a national inter-state system of highways embodying standards of design recommended by PRA and the American Association of State Highway Officials is a long-range program to be carried out over a period of years.

In most states half the cost of federal-aid projects, and up to one-third the cost of right-of-way, may be financed by the federal government.

Behind The Scenes In a Thriving City

THE PROBLEM

In preparing the 1947-48 budget for the city of St. Petersburg, City Manager Sharpe was faced with three basic facts:

1. **Rapid population increases, which require extended services to new residences.**
2. **Inflated prices, which mean higher payrolls and high cost of commodities and services.**
3. **The basic tax structure, which has not been altered to meet the increased service demands.**

Says Mr. Sharpe: "Every new house represents an increased demand for services, which is not offset by operating revenues from general property taxes or other sources from the residents occupying the new structure. This is due to the fact that every new residence is entitled to $5,000 homestead exemption." On the basis of the tax assessor's report of this year, Mr. Sharpe says that homestead exemptions totaled $48,816,396, or nearly 37% of the total assessed valuations.

By CARLETON F. SHARPE
City Manager
St. Petersburg, Fla.

ST. PETERSBURG, Fla., is one of many American cities that have experienced a permanent large increase in population during the last ten years. The rise was from 45,000 to 90,000 during a period when labor and materials were virtually unobtainable. The result is a present necessity for almost universal increases in municipal services.

To the eye, St. Petersburg is a beautiful and fortunate city, with wide streets, many of which are palm-lined. A million-dollar municipal pier thrusts from the yacht basin into Tampa Bay. The water, sewage treatment, gas, street lighting, local transportation systems, and radio station WSUN are all owned, powered, and operated by the city, and contributed $666,435 for the year to its support. The fine hotels and other boarding facilities, the boating and fishing, and the accessible Gulf beaches, on all of which the sun shines about 360 days a year, draw an additional hundred thousand people in the season. Close to a paradise for tourists and local business people, it nevertheless presents many problems to Mayor, City Manager, City Council, and other operating hands.

The immediate headaches are debt service and the Homestead Exemption Law. The first is the price of sky-high optimism, which infected Florida in 1929. An evidence of that era is given by the miles upon miles of pavements of brick brought in from Augusta and Birmingham .On some of these, keeping the grass cut is a problem. In fact, the $1,042,378 required for debt service actually exceeds the amount of ad valorem taxes—$1,023,338—anticipated in 1947-48 for operating the city. The total budget of the city of $7,234,231 includes $3,025,223 for general operations and $3,166,630 for utility operations, in addition to the debt service.

The present value of homestead exemptions is $48,816,396, or 36.8% of the grand total of assessed valuations. If the city were to apply the operating tax levy of last year, 12 mills for instance, to the total of homestead exemption, the city would be entitled to $585,792 to defray the additional cost of service and needed improvements. This exemption is required by amendment to the State Constitution, and the State has made no provision for making up this deficiency to the municipalities. In fact, the state legislature, meeting concurrently with the budget activities committee of St. Petersburg, killed every new tax proposal offered at its sessions. The city must meet its own needs and consider such sources of revenue as sewer rentals and garbage-collection charges.

Hospital and Water Works

A third of this year's budget increase of $831,565 is for hospital operation. A hundred beds must be added to the 201 now provided by the white hospital. A new 41-bed Negro hospital is already under construction. These hospital extensions will be financed by a 10% utility tax which applies to the municipal as well as to the private utilities. Hospital income amounts to about $550,000 annually, $78,893 less than the expense.

A million dollars needs to be invested in the next five years for increased water capacity and storage tank facilities. At present the city's 54 square miles are two-thirds served by trunk lines, and there is above-ground storage for only one million gallons in two R. D. Cole elevated water tanks. A high-lift booster station at Washington Terrace Pumping Station is equipped with one 35-mgd, one 13-mgd, and one 7-mgd De Laval pump. Emergency power is available from two 300-hp Fairbanks, Morse diesel-electric units.

This station is connected with the Cosme-Odessa well field by 29 miles of 36-inch concrete-steel cylindrical Lock-Joint pipe of 20-mgd capacity by gravity. Thirteen of the fourteen deep wells are equipped with Lane & Bowler vertical pumps. Emergency power is available from a 300-kw Sterling gasoline-electric unit. The well field covers 1,350 acres situated due north from the million-dollar pier. The field softening and filtration plant consists of the thirteen pumping units and the collecting mains, three lime treatment tanks, two coagulating tanks, two filter tanks, one mixing tank, one steel clear-well and aeration tank, and steel chemical bins for lime and ferric sulphate. The steel tank has welded steel joints and was installed by the Chicago Bridge & Iron Company.

A lime and oxide system softens the water to an average of 90 gpm, pH 7.4; and alkalinity, pH and CO_2 are balanced according to the Bayliss curve. Sixty percent of the water to the plant is softened by lime to theoretical zero, then mixed with 40% of raw well water, which carries enough CO_2 to stabilize treatment. The raw and softened water is coagulated and mixed with Monsanto Ferrisul (ferric sulphate). The lime and coagulating tanks, designed by Consulting Engineer Malcolm Pirnie, utilize the upward-flow principle. From the coagulating tanks the water flows to rapid sand filters, then to the clear well, and then by the 36-inch line to the pumping station in St. Petersburg. Just before leaving, activated carbon is added for taste removal, and chlorine and ammonia are added as a sanitary precaution.

Consumption increased 15% in the last four years to a daily average of 7,100,000 gallons over the last eight months. Main extensions are made by department crews, as are meter repairs. Meter reading and billing are done by the finance department. All plants and Superintendent R. G. Ridgely's car

are equipped with Motorola FM radio. For three years all intercommunication has been transacted by radio and Mr. Ridgely says that they would "be lost without this means of communication." The value of the water plant is $4,700,000.

Waste Disposal

A third of the population, occupying a much smaller proportion of the area, is served by sewers. For this area the present sanitary sewer system is adequate, but only a small amount of the city's sewage can come by gravity into the existing system. The treatment plant consists of tanks, screens (fine), and chlorinators. Sludge from screens is hauled away and buried. Septic tanks are widely used.

An enabling act has been approved by the recent legislature for sewer financing on a utility basis. It is expected that the $5,000,000 program, including treatment, will require sewer charges. The plan is to start construction, in one to three years, of a complete treatment plant, probably of the activated-sludge type with sludge digestion. Sewage collection will involve twelve pumping stations.

Flash rains create a serious drainage problem which explains the virtual absence of basements. Eventually a complete storm-sewer system must be built to handle these summer rains.

Garbage is collected in twelve Leach Refuse-Getters of 13 cubic yards each. Three Gar Wood Load Packers of 15-cubic-yard capacity are on order. Trucks with open scow bodies are used for trash collection for sanitary fills. One area in the center of the city has already been reclaimed as a park by the fill method. Two other city-owned properties are now in the course of reclamation.

The brick paving needs to be surfaced, and a $100,000 program is under way. Tar is available as a by-product of the gas plant. Last April an 80-100-ton-per-hour asphalt plant was installed by the Barber-Greene Company. Through this plant the native sand is run and mixed with the gas-plant tar to provide pavement base at very low cost. Surfacing is of asphalt. The public service department does the city paving, sewer construction, park and harbor development, and airport maintenance, all by force account. This involves a considerable arsenal of equipment, all serviced by a municipal garage. This equipment includes four Lorain ¾-yard draglines, four Caterpillar bulldozers, two Galion road patrols and a roller, two large air compressors, and ten trucks for the asphalt plant alone. All city automotive equipment except buses is serviced here. A new garage with an entire servicing unit will be established when financing permits. Stanley Pinel is Superintendent of Public Service.

Fire Protection

Five stations cover the 54 square miles, with a sixth urgently needed to protect the fast-growing north section and to forestall a rise in insurance rates. Bids will soon be asked. The new station would require ten additional firemen, while a change of the department from 84 hours to 72 hours will necessitate eleven men more. The present four stations, other than No. 1 Headquarters, have apparatus as follows: No. 2, a 1,000-gpm American-LaFrance pumping engine; Nos. 4, 5, 6, each a 750-gpm Seagrave pumping engine and a booster wagon carrying 378 gallons of water.

No. 1 station has a 65-foot and a new 75-foot American-LaFrance aerial ladder, 1,000- and 750-gallon pumping engines, and two chief's cars.

The booster wagons, built by the department, extinguish 90 percent of the 2,000 brush fires a year. All are equipped with fog nozzles and Onan 4-cycle light plants, of which there are five. All fire trucks and fire stations and the house of Chief Claude W. Nesbit are equipped with the new Federal Telephone and Radio Corporation FM emergency radio.

Police

The local police force consists of seventy uniformed men, eight detectives and five girls—a total of eighty-three. Chief J. R. Reichert points out that there is one policeman per 1,036 permanent residents and one per 3,600 for the entire city during the season—against a national average of 1:750. The new budget provides $21,089 for ten more men and $12,975 for automotive equipment.

Traffic work uses 25% of the force. The Traffic Bureau, established 1½ years ago, includes two men trained by the FBI and three graduates of Northwestern University traffic courses. Accident records are kept by intersections, and safety-lighting and traffic-signal improvements are made on the showing of these records.

There are thirteen cars equipped with two-way Motorola AM radio. Motorcycle officers use two Harley-Davidsons, two Indians, and a three-wheel car for patrolling the 835 Miller (Duncan Meter Company) penny-nickel parking meters. Meters were installed in 1936, and an additional 300 of the same make will be purchased soon. Coins are sorted and counted by Brandt coin-handling machines. Twenty-two intersections are equipped with three-color Crouse-Hinds traffic signals placed horizontally. These will be adjusted for vertical sight and an additional twelve to fifteen intersections will be similarly equipped. Eagle traffic-actuated signals will be installed at three or four outlying intersections.

Modern street lighting is contemplated throughout the city. Certain of the main streets already have pendant light-controlled luminaires, but elsewhere lighting is by the old upright luminaires on concrete posts. The immediate plan, for this year, is to light intersections having a bad accident history.

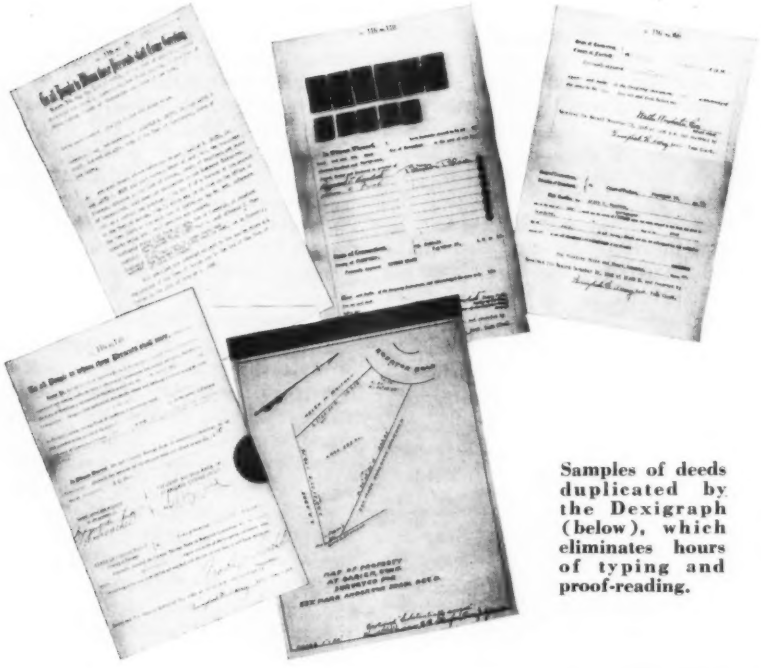
The city owns the entire transporta-

Council Ready To Vote Full Conversion To Busses
Total 1947-48 Budget Set At $7,234,231; New Revenue Necessary
WAIT!--Street Cars vs Busses Needs Public Discussion!
New Budget, Assessments Ready Today
Future Growth Of City Must Be Considered In Transit Decision
1948 Tax Rate Depends on Final Okay By Next Council of Operating Budget
City to Ask for Bids On New Fire Station
Jump in City Taxes Looms
Population Rise Held Cause Of Increased Need
Two days' newspaper headings from the St. Petersburg's Times and Independent indicate local public interest in the city's municipal activities and budget for 1947-48.

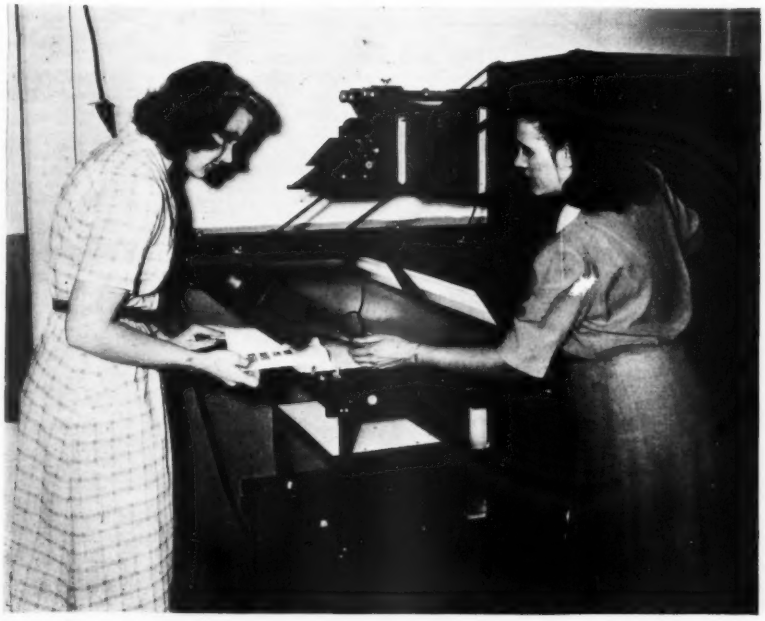
tion system, operating both street cars and buses. Ten new GMC diesel buses are scheduled for delivery this year. It is planned to change two lines of street cars to bus operation. This trend aroused considerable controversy, since the local people are acquainted with the quiet P.C.C. street car.

The foregoing minimum modernization requirements also take cognizance of the necessity for modern records and accounting procedures. Burroughs bookkeeping machines are contemplated for general and tax accounting and on stock control. National Cash accounting machines are to be used for utilities billing and for keeping accounts at Mound Park Hospital. On all this work Addressograph equipment will print such basic data as name and address of consumer or taxpayer, property description, and other static information which makes for speed and accuracy in accounting and billing operations.

Deed-Copying in Darien Both Quick and Accurate



Samples of deeds duplicated by the Dexigraph (below), which eliminates hours of typing and proof-reading.



LAST Christmas, the town clerks of Darien, Conn., were presented with something new in the Christmas-present field. This was the installation in the Town Hall of a Remington Rand Dexigraph camera. Deed-copying, formerly a tedious, monotonous job, has now been made pleasant, interesting, and swift. This machine photo-copies in a few minutes what ordinarily would take one hour to duplicate on the typewriter. Winifred Avery and May Summerton, assistant town clerks, say that a week's work can be accomplished in one day by means of the Dexigraph.

Darien, a suburb of New York City, is essentially a commuters' town. Property there is always in great demand, and there is quite a flux in the ownership of land. Consequently, Darien's Town Hall has numerous requests for duplicates of deeds. In that town, deed-copying by typewriter is a job that normally kept four or five girls busy—typing, proofreading, checking, and making final revisions. All of these phases made it possible for errors to creep into the work. During the war, with the shortage of personnel among town clerks, the idea for a quicker and more accurate means of duplicating was conceived. When the opportunity arose, the town purchased the Dexigraph, and its only regret is that it didn't buy one years ago.

Easily Operated

Now, the two assistants do what formerly kept five people busy. The machine is compact, takes up little space, and is easy to operate. One girl positions the material to be photographed on the copy-table, while the other operates the camera. The development process is also simple and quick, needing only one person to perform all phases. In one afternoon, two girls duplicated 59 deeds, all four or five pages long. What particularly pleases the clerks is that they no longer have to puzzle over signatures on deeds, trying to transcribe them. These documents are now duplicated identically without chance for error, and filed for posterity in the town record book.

Atlanta Annexation Try Fails

ILLUSTRATIVE of one of the major problems confronting city governments today is the outcome of the election conducted in Atlanta, Ga., August 19 to determine whether two adjacent areas, now a part of Fulton County, should be annexed to the city proper. A vigorous campaign for annexation was spearheaded by a number of city officials and citizen groups. Of a total of 11,978 registered voters in the two areas, however, only 7,421 voted, and of these 2,605 were for annexation and 4,816 were opposed.

Stressing the fact that the city's land area must be expanded, Mayor William B. Hartsfield pointed out in a local radio address that one of the issues involved was "whether Atlanta is to be an expanding progressive unit of local government, or whether it is to be condemned to slow deterioration, surrounded by suburbs which are by themselves unable to do those large things which must be undertaken if a metropolitan area is to grow."

The campaign for annexation also emphasized that, with continuing home construction and the movement to suburbs outside the corporate boundaries of the city (evidently still a nation-wide trend according to latest statistics of the census bureau), many non-residents were losing a voice in the government of the affairs of the city in which they earn the living for their families.

The Facts on Annexation

A brief, well-presented booklet, entitled *The Facts on Annexation*, prepared by Clark E. McDonald, Executive Vice-President of the Central Atlanta Improvement Association, declared:

A large number of the people owning millions in Atlanta's central business district do not live in Atlanta, nor can they take any part in, or vote upon the officials whose policies are so essential to the preservation of their investments.

The same booklet presented tax studies and comparisons of individual properties in the areas concerned before and after the proposed annexation. Other literature and statements, published by the Greater Atlanta Association, which spearheaded the annexation drive, and supporting groups such as the League of Women Voters and the Atlanta Chamber of Commerce, also indicated the increased municipal services which would be available to residents of the present non-incorporated areas if they voted for annexation.

But the campaign endeavors, excellent though they were, proved inadequate to turn the election tide. As with other large cities, Atlanta's problem remains, and evidently can be solved over the years only by continuing efforts and a long-term program of citizen education to imbed the importance of a metropolitan concept of government, without regard for arbitrarily created political boundaries.

Annexation Would Improve Urban Services

The county government attempts to, but cannot provide residents outside of the city with adequate urban services:

Police Protection: Fulton County contains 548 square miles and is 62 miles long. There are 124 county policemen operating out of the county Court House. The city of Atlanta has 457 policemen operating in 34 square miles.

Fire Protection: As in the case of police protection, the county citizens suffer from a too-little - too - far - away situation. For example, the county fire stations are entirely too small, necessitating the Atlanta Fire Department making 165 calls outside the city limits in 1946. Many Northside districts do not even have water mains for fire fighting purposes. Many places have no fire plugs, since they must have 6" water mains and many mains in this area are only 4". There are over 150 streets in the Buckhead area with little 2" and 3" mains.

Street Cleaning and Flushing of Street Sewers would be a new city service that county residents have not received previously.

Garbage Protection: The county's present garbage disposal system has reached the point of endangering citizens' health. The city would incinerate garbage rather than just create unsanitary dumps.

Above and top right: Pages from the booklet, *The Facts on Annexation*. Below: A leaflet distributed by the Atlanta Water Works Department.

Willing Water Sez:

"Fire fighting requires adequate water supply and pressure."

Annexation Means:

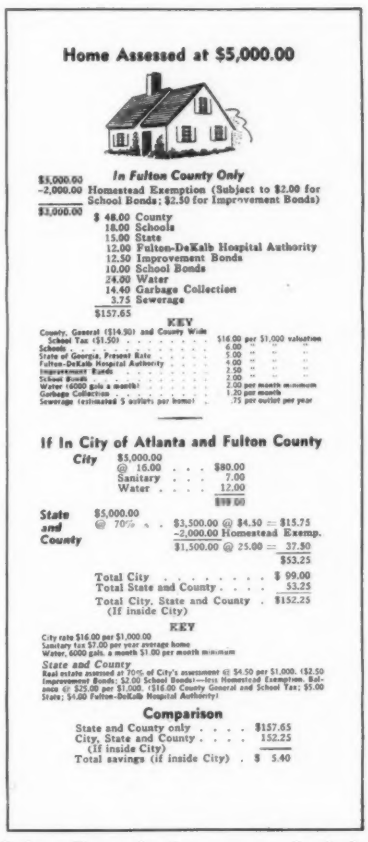
1. Construction of $2,500,000 water purification plant and pumping station in the northside.
2. Replacement of 2, 3, and 4-inch water mains with 6-inch mains. Fire hydrants will not operate on less than 6-inch mains.
3. Installation of adequate fire hydrants on all 6-inch mains for fire protection and safety on homes as well as business.
4. Improve all dead end mains with ample circulation.
5. Above improvements will enable reduction of fire insurance rates. The average county rate is now 38c per $100.00, while in the city the average is 25c per $100.00.

The City of Atlanta finances all its water works improvements with revenue certificates. These certificates are retired by current income; thus no additional taxation or bonded indebtedness will be necessary.

VOTE FOR ANNEXATION

and a Greater Atlanta. No matter where you live, it's your town—help it grow.

Election August 19th



Home Assessed at $5,000.00

In Fulton County Only

$5,000.00	
−2,000.00	Homestead Exemption (Subject to $2.00 for School Bonds; $2.50 for Improvement Bonds)
$3,000.00	
$ 48.00	County
18.00	Schools
15.00	State
12.00	Fulton-DeKalb Hospital Authority
12.50	Improvement Bonds
10.00	School Bonds
24.00	Water
14.40	Garbage Collection
3.75	Sewerage
$157.65	

KEY

County, General ($14.50) and County Wide School Tax ($1.50)	$16.00 per $1,000 valuation
Schools	6.00 " "
State of Georgia, Present Rate	5.00 " "
Fulton-DeKalb Hospital Authority	4.00 " "
Improvement Bonds	2.50 " "
School Bonds	2.00 " "
Water (6000 gals a month)	2.00 per month minimum
Garbage Collection	1.20 per month
Sewerage (estimated 5 outlets per home)	.75 per outlet per year

If In City of Atlanta and Fulton County

City	$5,000.00	
	@ 16.00	$80.00
	Sanitary	7.00
	Water	12.00
		$99.00
State and County	$5,000.00 @ 70%	$3,500.00 @ $4.50 = $15.75
		−2,000.00 Homestead Exemp.
		$1,500.00 @ 25.00 = 37.50
		$53.25

Total City	$ 99.00
Total State and County	53.25
Total City, State and County (If inside City)	$152.25

KEY

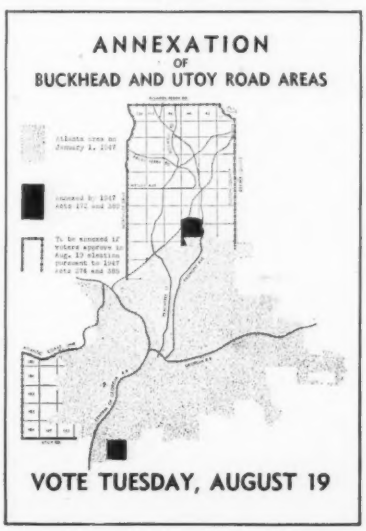
City rate $16.00 per $1,000.00
Sanitary fee $7.00 per year average home
Water, 6000 gals. a month $1.00 per month minimum

State and County
Real estate assessed at 70% of City's assessment @ $4.50 per $1,000. ($2.50 Improvement Bonds; $2.00 School Bonds!—less Homestead Exemption. Balance @ $25.00 per $1,000. ($16.00 County General and School Tax; $5.00 State; $4.00 Fulton-DeKalb Hospital Authority)

Comparison

State and County only	$157.65
City, State and County (If inside City)	152.25
Total savings (if inside City)	$ 5.40

Below: From the front cover of a bulletin issued by the Atlanta League of Women Voters, showing the areas involved in the annexation election.



ANNEXATION
OF
BUCKHEAD AND UTOY ROAD AREAS

VOTE TUESDAY, AUGUST 19

Lancaster Prefers Chloramines

Lancaster, Pa., uses chlorine-ammonia treatment for its water supply and gets consistently good results.

THERE is no reason to change the treatment of water when that treatment gives good results, and the people like the finished product. So reasons Lancaster's Water Works Manager, Charles Abraham, and his Superintendent of Filtration, L. S. Duckworth. Others may solve troublesome taste and odor problems with superchlorination without ammonia, and at the same time improve their filter operation, but these two believe in plenty of settling time, prying the tastes and odors out with activated carbon, and giving the water a long-lasting chlorine residual.

On the surface, this may seem to be the philosophy of a conservative who refuses to consider new changes. Those who know the Lancaster water department realize that this is not true.

Lancaster has its share of the new and unusual in water supply. The first Dorr clarifier ever to be used in water treatment can be found here. For distribution, the system uses a set of standpipes, one of which holds five million gallons, making it the largest standpipe in the world used for water supply. The water works has long been ahead of the parade in its public-relations program. Both the plant and pumping station are spotlessly clean, so much so that one prominent sanitary engineer who visited Lancaster said that it was the only plant where he could drop a candy bar on the floor and still feel like picking it up and eating it without the slightest misgiving. The park-like grounds are beautifully landscaped. Each Christmas the filter plant puts on a Christmas display that attracts thousands from the city and the surrounding area. The management and personnel are always alert to any development that will improve service.

However, insofar as abandoning the use of chlorine and ammonia in favor of some type of superchlorination, one need not look for that, says Filter Superintendent Duckworth, until the present system proves unable to produce a water that the people like.

This does not mean that conditions are necessarily ideal. The Conestoga River that furnishes the supply to Lancaster is flashy. It draws from a drainage area of over 300 square miles of farming district and brings a water to the plant that will vary in character from 10 to 6,000 ppm turbidity.

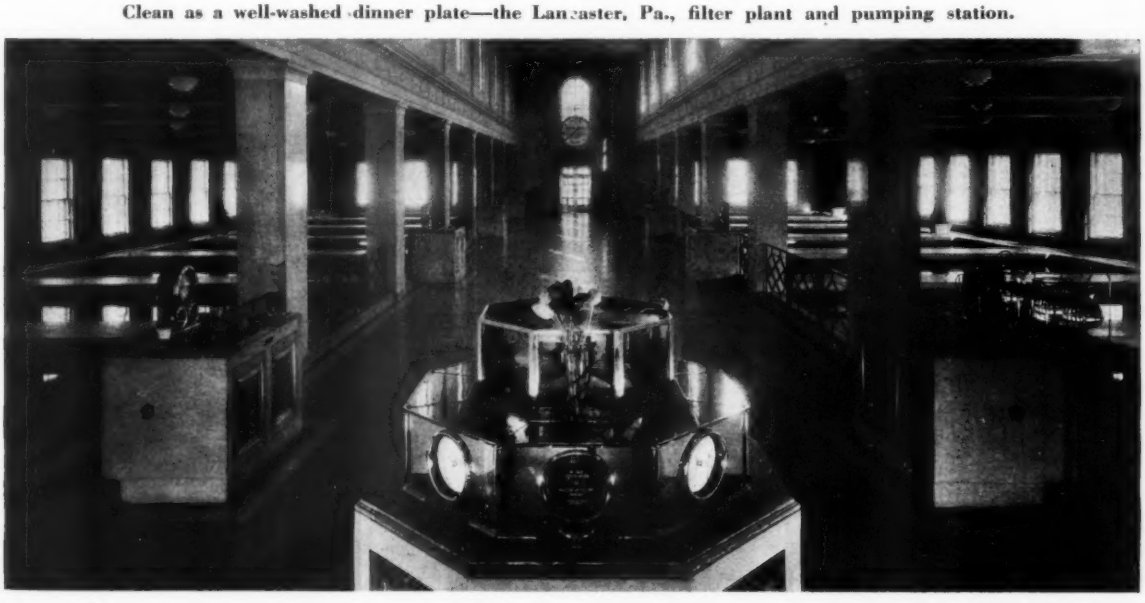
On Both Sides of River

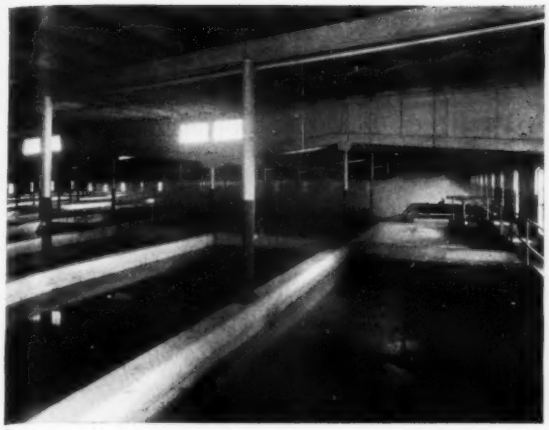
The plant has a novel arrangement with the pumping station on one side of the river and the filter plant on the other, an arrangement resulting from a design that reused the old slow-sand filter structures. Water enters the pumping station through a 42-inch intake where a Link Belt automatically cleaned screen removes such oversize debris as may be in the water. When it enters the pumping station, a set of three Worthington low-duty pumps, working against a 30-foot head, boost it across the river to the filter plant. The pumps have a capacity of 5, 10, and 15 mgd and are powered by 50-, 100-, and 150-hp Westinghouse motors respectively. The pumps deliver the water through two cast-iron mains, one 30 inches and one 36 inches. A 150-hp Sterling gasoline engine is available for standby purposes if a power failure makes its use necessary.

When the water enters the plant, it first passes through a rapid mix chamber consisting of a flume with baffles. This flume is 8 feet high, 5 feet wide, and 75 feet long. It is at this point that the water receives an application of chemicals consisting of alum, lime on occasion, when the pH of the water dictates, and copper sulphate the year round, fed at the rate of 0.2 pounds per million gallons for algae control. This copper sulphate is applied through a reconverted dry feeder that applies the sulphate in solution. The water receives its application of Nuchar activated carbon after it leaves the mixing basin.

From the mixing basin, the water

Clean as a well-washed dinner plate—the Lancaster, Pa., filter plant and pumping station.





Slow-sand filters replaced by clear-water storage.

Seven feeders apply correct chemicals for algae cotrol.

goes to a flocculation chamber 18 feet deep and 25 feet square. Six paddles in this chamber making 1½ revolutions per minute provide the flocculating action.

The water with its two-stage settling floc then goes to the Dorr clarifier—the same one that was the first installation of this type in a waterworks application. This clarifier has a capacity of 750,000 gallons and collects the heaviest of the floc.

The water then goes to a second set of settling basins consisting of two covered tanks, each holding 1 mg each. At this point most of the remaining floc is deposited.

After settling, the water passes to the eight Builders Iron Foundry filters, each rated at 2 mgd, and all operated by a central master control. The filters are somewhat unusual in that they have only 10 inches of gravel graded from 3 inches to ⅜ of an inch, but this gravel is held in place by a bronze screen thus preventing it from overturning during the backwashing operation. One of the beds has Anthrafilt in place of the standard filter sand. This has been successful enough to encourage Superintendent Duckworth to consider replacing them all with Anthrafilt when the sand in each becomes coated enough to lose its good filtering qualities.

Backwash in Filters

Superintendent Duckworth varies his operation of the filters somewhat from the standard method by backwashing each filter every 96 hours rather than controlling the backwash by the loss of head. This more frequent backwashing keeps the filters cleaner and they are better able to operate at peak efficiency. Comparison with operations by the standard loss-of-head method has shown that he uses approximately the same amount of wash water. He also minimizes mudball formation and generally keeps his filter in excellent condition. The filters have not needed any of the surface washes to keep them operating.

Following filtration, the water receives its application of chlorine and ammonia and then goes to a clear-water storage basin. This basin is covered and from May to December the water is aerated by being pumped by a 22,000,000 gallon aerator pump from this clear-water storage basin to the aerators. After the water passes through the aerator nozzle, it is stored in a basin that was originally the old slow-sand filter beds, now emptied and revised for water storage. During the other periods of the year the water passes directly from the clear-water storage basin to the pumping plant across the river. From May to December, the water runs across the river to the pumping plant from the covered basin which was originally the slow-sand filter beds. When the water is aerated, it is free of any carbon dioxide or any other undesirable gases.

Second Set of Mains

The water is carried across the river to the pumping plant through a second set of 30- and 36-inch mains where a set of Westinghouse high-duty pumps deliver it to the distributing system. There are three of these pumps; one 5 mgd, one 10 mgd and one 15 mgd, all working against a 250-foot head. Each is powered by a Westinghouse motor of 250, 550 and 800 hp, respectively.

All lines are metered with Builders Iron venturi meters. They show the operator how much water is going to the filter plant, how much is in the filter plant, and how much is going to the system. There are three standpipes floating on the system; one ½ mg, one 1 mg, and one 5 mg. The first two are controlled by altitude valves, but the 5-mg pipe is controlled by a Wallace and Tiernan remote recorder meter that tells the operator the level in the standpipe.

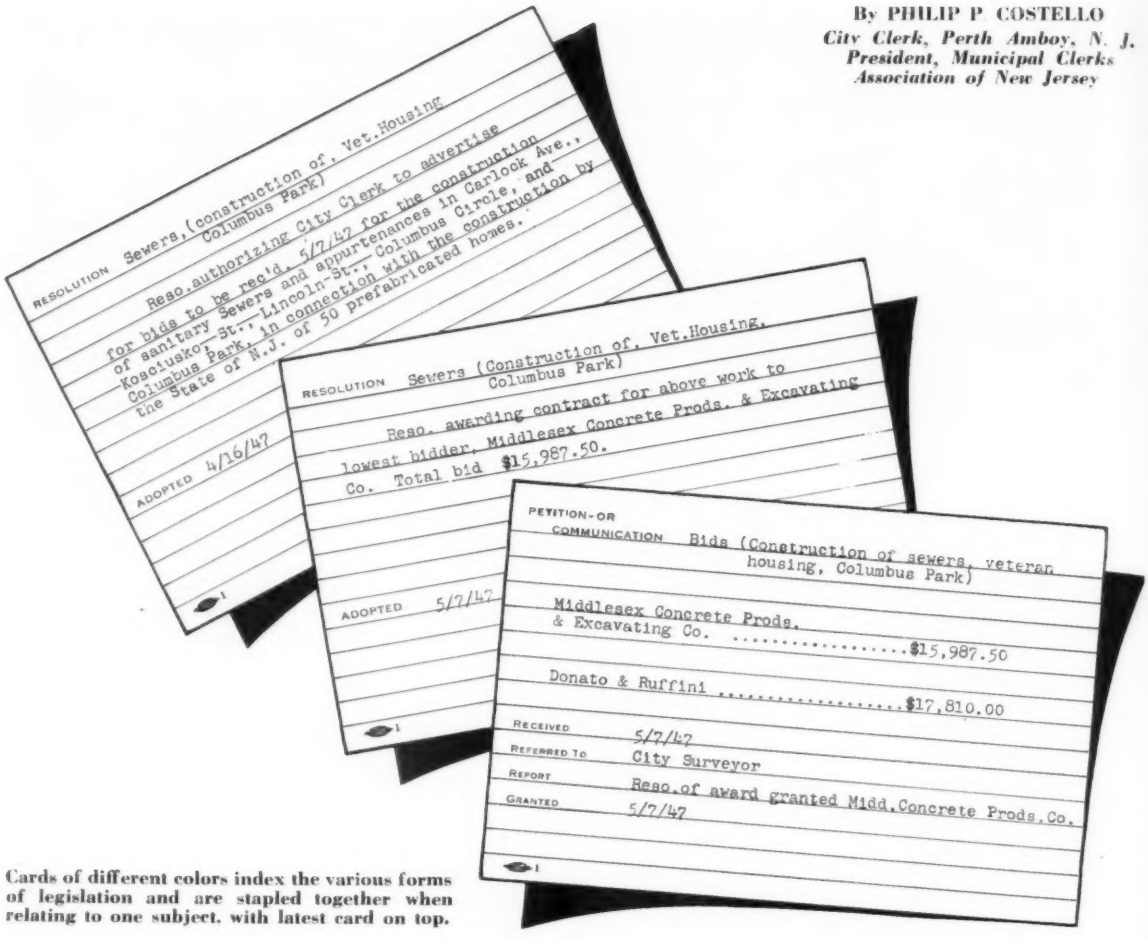
Each pump has an electric meter to measure the amount of electricity required for pumping. All pumps have Chapman automatic cone valves on the discharge side that close the line when the pump stops working. Rensselaer hydraulic valves direct the flow of water to the distribution system itself.

With this type of plant, which gives added emphasis on settling, directly removes offensive tastes and odors by the use of activated carbon and aeration, and which keeps the filter beds in excellent condition by frequent back-washing, Superintendent Duckworth feels there is little need for anything other than post-chlorination with ammonia thrown in to insure a persistent though somewhat weaker residual. Strict and frequent laboratory tests show virtually no gas formers, and taste and odor complaints are so rare that Manager Abraham becomes concerned when one or two are reported.

Excellence of operation needs more than a good laboratory analysis to win thorough public confidence, however. So the water department goes to great lengths to keep the plant immaculate. All equipment, walls, and floors are painted attractively. The pumps and motors are enameled a shiny white to give even greater emphasis to cleanliness. The filter room at one time was troubled with moisture condensation which caused the paint to blister and peel off. Superintendent Duckworth, after a little experimenting, selected an Inertol enamel, Ramuc type B, applied it to the walls, and stopped all his difficulties.

The plant is operated under the direction of Charles Abraham, Manager; L. S. Duckworth, Filtration Superintendent, and G. W. Fordney, Pumping Plant Superintendent.

By PHILIP P. COSTELLO
City Clerk, Perth Amboy, N. J.
President, Municipal Clerks Association of New Jersey


RESOLUTION Sewers, (construction of, Vet.Housing Columbus Park)
Reso.authorizing City Clerk to advertise for bids to be rec'd. 5/7/47 for the construction of sanitary Sewers and appurtenances in Carlock Ave., Kosciuskor St., Lincoln St., Columbus Circle, and Columbus Park, in connection with the construction by the State of N.J. of 50 prefabricated homes.
ADOPTED 4/16/47
RESOLUTION Sewers (Construction of, Vet.Housing, Columbus Park)
Reso. awarding contract for above work to lowest bidder, Middlesex Concrete Prods. & Excavating Co. Total bid $15,987.50.
ADOPTED 5/7/47
PETITION-OR COMMUNICATION Bids (Construction of sewers, veteran housing, Columbus Park)
Middlesex Concrete Prods. & Excavating Co. $15,987.50
Donato & Ruffini $17,810.00
RECEIVED 5/7/47
REFERRED TO City Surveyor
REPORT Reso.of award granted Midd.Concrete Prods.Co.
GRANTED 5/7/47

Cards of different colors index the various forms of legislation and are stapled together when relating to one subject, with latest card on top.

System in the City Clerk's Office

THE municipal clerk is usually the recipient of all mail addressed to the governing body. This is immediately opened and stamped for the date and time received. An immediate acknowledgment should be made, telling the writer of the disposition of the request. Many of the items addressed to the governing body can be disposed of without having to go to the meeting room. Many can be referred to one of the several departments and the item disposed of to the satisfaction of all concerned.

Matters for the next meeting of the governing body are held in a pending file. In this connection the clerk is called upon to prepare reports, recommendations, resolutions, and ordinances even though the community may have a law department. Because of his experience, it seems easier to call upon the clerk to prepare such items. However, in the case of ordinances, the original of each should be personally approved by the municipal attorney regardless of who may prepare it.

A list of all items to come before the meeting is mailed to each governing body member so he receives it the day before the scheduled meeting. This does not preclude the addition of any other item from being considered if it arrives after the preparation of the list.

The clerk should have all matters for the meeting arranged in proper order. The board members should sign their respective resolutions, reports, etc., before entering the meeting room.

Most governing bodies have rules of order, and the subjects are taken up accordingly.

The clerk, at the meeting, may read the items in full or give a brief outline conveying the meaning of the subject. However, ordinances should be read in full both at the time of introduction and at the time of public hearing and final passage. It is also a good practice to have on hand, for all interested parties, printed or mimeographed copies of ordinances at the time of the public hearing.

It is most important that the clerk keep an accurate record of each action of the governing body, not necessarily verbatim, but of the final action taken.

It is well to have a complete stenographic record of the proceedings for file, but it is not essential to set down every word in the official minutes.

As the meeting progresses, proper notes are made about the disposition of each item read.

Votes are recorded on tally sheets showing the ayes and nays, each sheet corresponding to the subject-matter number. These tally sheets are preserved as a part of the original file.

We number each item of the meeting. The item is rubber-stamped, indicating the action taken.

After the meeting, copies of papers for reference are made. A regular printed form is attached which provides a space for report or recommendation. The clerk making the copy initials and dates the original. Certified copies of resolutions and ordinances are prepared and referred to or filed with the proper departments. Original documents are never permitted to be taken from the office. When required to exhibit a document in court, a certified copy or a photostat is ample.

A follow-up record of all subjects referred for future report is kept. Some items will probably never be reported upon, and they will find their way to the morgue.

Newspaper advertisements are prepared for bids, sales of property, public hearings, and ordinances.

Preparation of Minutes

In preparing the minutes of each meeting the date, time, and place is given, as well as the full names of each member of the governing body present and of those absent. Immediately following should be the approval of the minutes of the previous meeting.

As indicated, the minutes should be brief, covering the detail action of the subject acted upon. The recording of speeches is unnecessary. However, an explanation of a vote is a part of the record. In the case of a public hearing, the insertion of the main points made is necessary in order to have a clear record in event of any subsequent action, particularly a court action. Resolutions and ordinances are always reported verbatim, together with the vote in each instance.

Several copies of the draft of the minutes are prepared on ordinary typing paper. After correcting and editing by the clerk, a copy is given to the newspaper for publication, and to the printer who prints a stated number in monthly volumes. These volumes are for the use of the public. We bind a certain number each year for permanent records.

The official record of the minutes is typed for loose-leaf binders. After preparation they are signed by the individual members of the governing body and attested to by the clerk under his seal. This is always done before the succeeding meeting, at which the first order of business, then, is usually a motion to approve the minutes of the previous meeting, as engrossed. If a correction is necessary, this is also effected by motion. When loose-leaf books are full, binding is made permanent. The volumes are then given a number and are labeled according to date.

Binding of Ordinances

Ordinances are likewise entered in a loose-leaf book, each bearing a number. They too are signed by the members of the governing body and attested by the clerk. Permanent binding also follows upon completion of each volume. Printed copies of each ordinance are made available to the public on uniform-size sheets. These copies indicate the ordinance number, dates of passage, names of newspaper and places, and dates of publication. Periodically, the ordinances are bound and indexed.

In addition, we maintain a permanent record showing the proofs of publication of each ordinance in order to prove the legality of its adoption.

We are required also to file certain ordinances in the office of the county clerk, such as laying out of a street, vacation of a street, certain franchises, rights of way, etc. Certified copies, together with a map, suffice.

Bound and printed copies of the minutes and ordinances are filed each year in the public library for the convenience and use of the citizens.

We file all papers of each meeting by date of meeting, together with a copy of the original draft of the minutes. The roll-call tallies are also a part of this record. All papers are stapled to the folder to insure their retention in their original file.

Indexes

Indexes are prepared for each subject. We have found the use of several colored cards for the different forms of legislation, such as resolution, ordinances, communications, petitions, and motions, a definite help. Our card size is 4 by 6 inches. Each card is a printed form indicating the subject matter and date of passage. In the case of ordinances, the number, newspaper publishing same, and the dates are recorded. Where there is a series of actions on a particular subject, the cards are fastened together with the latest action card on top. Of course, proper cross-references must be made on each item. For instance, a subject like the vacation of Dorsey Street would be indexed under: 1. Vacation, Dorsey Street. 2. Street, Vacation of Dorsey Street. 3. Dorsey Street, vacation of. Supplemental or amendatory ordinances are card-indexed and attached to the record of the original.

Special files are kept for various important and special subjects. Each community would vary this to some degree.

Our governing body is also the licensing authority for the issuance of liquor licenses. We maintain a special liquor file having a folder for each license number. In this folder the original application is filed together with any transfer or renewal, all correspondence pertaining to this license, also any charges or violations and their disposition, thus maintaining a complete history of the license from its issuance to date. A summary sheet on top of each file is maintained. We also maintain a card index by name and trade-name.

A general form of application is used for almost every kind of license where a detailed record of the applicant is essential. A blank line at the top provides for the insertion of the type of license applied for. There is also space for the recommendations of the police department and approval by the several heads of the departments, as well as for the date of issuance and the license number. This form has been very useful and saves the costs of printing for many different license forms, although it has been found necessary to have a few other types of application forms for special kinds of licenses.

Insurance policies are approved by the city attorney, whether new or renewals. A card index is maintained, one by department name, showing all details, the other by expiration date. This too shows details. A record is also maintained showing the total insurance carried on each item or premises. A like record is kept for surety bonds covering city officers.

Contracts, agreements, deeds, rights of way agreements, and riparian rights

CHECK LIST

NAME	YEA	NAY
Commissioner SIEBER	✓	
Commissioner BALINSKI	✓	
Commissioner RUNYON	✓	
Commissioner DALTON		absent
Commissioner DELANEY	✓	
TOTAL		

Date June 4, 1947 #7

The tally form used to record individual votes is numbered to agree with the subject item handled at the meeting.

are filed in special files, coded and indexed.

Special Files

We also maintain special files on many special items such as franchises for telephone, electricity, bus lines, railroad grade crossings, etc.

Applications for various licenses are kept in loose-leaf binders for the current year. At the end of the year they are transferred to vault files. Stubs are maintained on all licenses issued, the application being endorsed with number of the license issued.

All election records are retained in their entirety. A loose-leaf tabulation of each election is maintained for easy access.

The foregoing outline of procedure in Perth Amboy is based on a paper presented by City Clerk Philip Costello at the recent organization meeting of the National Institute of City and Town Clerks, at French Lick Springs, Ind., at which he was elected Third Vice-president. Another paper presented at the same meeting by Simon Etkin, City Clerk, Schenectady, N. Y., entitled *Plans for Indexing of Minutes, Codifications of Ordinances and Local Laws*, is available from the Institute at 730 Jackson Place, Washington, D. C.

The City and Milk Pasteurization

Validity of requirements for pasteurization within the city

By JAMES A. TOBEY, *Dr.P.H., LL.D*
Member of the New York Bar

Pasteurization of all market milk is now universally recognized as an essential public health measure. The heating of all particles of the milk to 143° F for 30 minutes or the heating to 160° for fifteen seconds, followed by immediate cooling to 50° or less, destroys all dangerous bacteria which may be in the milk. It puts the final seal of safety on a clean milk supply without appreciably affecting the unsurpassed nutritive qualities of our most nearly perfect food.

This process not only has the sanction of science, but has been accorded general legal approval. It is estimated, in fact, that about 80% of all market milk supplies in this country are now pasteurized in accordance with legal requirements. Whenever mandatory pasteurization laws, ordinances, or regulations of a state or its governmental political sub-divisions have been challenged in the courts, they have been sustained almost without exception as a valid exercise of the police power.[1]

Since 1914, when the first decision on pasteurization was handed down by a court of last resort,[2] the courts in fourteen states have had before them about a score of cases involving various aspects of pasteurization laws and regulations. These decisions have established the legal principle that a city has the right to require that *all* milk sold in the city shall be properly pasteurized,, or that all milk except the grade known as certified shall be pasteurized.[3] The courts will, in fact, now take judicial notice of the desirability and value of this process.

While a city has the right to require that all milk sold within its limits shall be pasteurized, it does not as a rule have the right to demand that such pasteurization shall be done only within the city limits, nor may it prohibit the sale of milk which has been adequately pasteurized elsewhere and has been properly handled during transit and storage. Half a dozen recent court decisions dealing with this matter uphold the well-established principle of law that the state and its political agents can regulate but not prohibit distribution of a wholesome article of food.

Legal Decisions

This question first came up in 1928 in a New York case, but was not finally decided at that time. An ordinance of the city of Niagara Falls stating that all milk sold in the city must be pasteurized therein was challenged by a milk dealer in Buffalo, who won his case. On appeal, the Appellate Division of the Supreme Court reversed the decision of the lower court and sustained the ordinance. The highest court of the state, the Court of Appeals, decided, however, that the milk dealer did not have a right of action since he had not applied for a license. If the license were unreasonably denied, he might then attack the validity of the ordinance.[4] Apparently he did not do so, as there is no further record of the case.

A few years later, in 1933, the Supreme Court of Minnesota definitely ruled that a city ordinance requiring pasteurization within the city was invalid.[5] The court pointed out that if milk is produced, handled, pasteurized, transported, and distributed in accordance with the laws of the state, it makes no difference where it is pasteurized; that the milk can be inspected without difficulty; and that for purposes of inspection a suitable fee may be charged by the city. A somewhat similar ruling was sustained in Kentucky in 1935.[6]

A decision of the Supreme Court of California, handed down two years later, had the same general effect.[7] An ordinance of the city of Santa Rosa prohibiting the sale of pasteurized milk in the city unless pasteurized within its bounds was held to be void as an unreasonable trade barrier. The court mentioned with approval the earlier Minnesota case, and also pointed out that the milk in question in the present California case was produced in the same state-regulated milk inspection district. This opinion was contrary to an earlier decision of a California District Court of Appeal which upheld an ordinance of the city and county of San Francisco requiring that milk from a different inspection district must be pasteurized within the city.[8]

The decision of the California Supreme Court was followed in a subsequent case in one of the District Courts of Appeal,[9] when an ordinance of the city of Fresno was held to be invalid because it compelled pasteurization within the city limits. More or less coincident with this decision was one of the Texas Court of Civil Appeals, in which a city ordinance was held to be unconstitutional and void because it attempted to prohibit sale of milk unless pasteurized in the same county in which the city was located.[10] In this instance the dealer's plant was sixty miles away.

"The power to provide facilities by which the grades of milk may be determined," said the court in this Texas case, "does not include the power to dictate the location of the plants in which the milk is pasteurized."

Proper Operation Important

This, then, is the general rule of law, at least in the jurisdictions in which this matter has been adjudicated. Certainly, the location of a pasteurization plant is, within reasonable limitations, far less important to the public health than the skill, care, and probity with which it is operated, and the manner in which the milk so processed is subsequently handled.

References

[1] J. A. Tobey, *Legal Aspects of Milk Sanitation* (2nd Ed; Washington, D. C.: Milk Industry Foundation, 1947.)
[2] *Koy v. Chicago* (1914), 263 Ill. 122, 104 N. E. 1104, Ann. Cas. 1915C 67.
[3] J. A. Tobey, *Public Health Law* (3rd Ed; New York: Commonwealth Fund. 1947)
[4] *Lang's Creamery v. Niagara Falls* (1928), 251 N. Y. 343, 167 N. E. 464, affg. 231 N.Y.S. 368, 224 App. Div. 483.
[5] *State v. City of Minneapolis* (1933), 190 Minn. 138, 251 N. W. 121.
[6] *Grant v. Leavell* (1935), 259 Ky. 267, 82 S. W. (2d) 283.
[7] *La Franchi v. City of Santa Rosa* (1937), 8 Cal. (2d) 331, 65 P. (2d) 1301, 110 A.L.R. 639.
[8] *Witt v. Klimm* (1929), 97 Cal. App. 13, 274 P. 1039.
[9] *Van Gammeren v. City of Fresno* (1942), 51 Cal. App. (2d) 235, 124 P. (2d) 621.
[10] *Prescott v. City of Borger* (Tex. 1942), 158 S. W. (2d) 578.

Fire-Fighting in Buffalo

AS A PORT CITY on Lake Erie, Buffalo's Fire Department must cover an extensive waterfront and consequently, a fireboat producing 9,000 gallons per minute at 120 pounds of pressure is an important element of equipment. On land adequate protection necessitates 47 companies, using 33 pumping engines and 14 ladder trucks. These engines comprise 12 American LaFrance, 9 Buffalo, 4 Seagrave, and 8 Ahrens-Fox. Latest additions are a 100-foot aerial and a 1,000-gpm pumping engine. In reserve at the repair shop are 8 pumpers and two 75-foot aerials. Life-saving is handled by swim rescue squads. A smoke ejector that has proved its value locally was devised by Captain Roy Farrell of Engine Company 13.

The hundreds of freighters and pleasure steamers plying Lake Erie and the Niagara River create a special hazard. It is Lake Erie, however, which provides Buffalo's inexhaustible water supply. For fire fighting there is the city supply and a high-pressure system operated and maintained by the Fire Department. From the filtration plant at the lake side, the water is pumped into the distribution system through three 60-inch lines from the Colonel Ward station, and three 48-inch lines and one 36-inch from the Massachusetts Avenue pumping station. The combined station capacity is 240 million gallons per day, feeding to 139 miles of 16- to 60-inch mains and 624 miles of 4- to 12-inch mains. Elevated storage is provided by three 2,000,000-gallon tanks.

The independent high-pressure system in the city's high-value district consists of 14.2 miles of pipe with 225 high-pressure hydrants. Capacity is 18,000 gpm at 300-pound pressure, with pumps located in the Colonel Ward pumping station. In reserve are three 3,000-gpm Manistee multiple-stage turbine-type centrifugal pumps and three 3,000-gpm motor-direct-drive Worthington centrifugal pumps.

Junior Captain William E. McGee heads the training bureau, which uses an 88-foot drill tower of eight stories, said to be one of the best. The 21-day training period includes work in the tower, knowing prescribed knots, laying hose lines, the chemistry of fire, ventilation, first aid, use of tools and equipment, general behavior at fires, rules and regulations, the care, maintenance, and operation of apparatus, and rescue work. It also includes training on three cutaway pumps of different types, specially planned and constructed from old pumps by Superintendent of Apparatus George A. Leo, and said to be a feature used exclusively by the Buffalo Fire Department.

Fire-Alarm System

In the fire-alarm office, a North Electric telephone system with two 100-line automatic switchboards runs direct lines to the Commissioner's office, to each fire house, to the police, and to the Emergency Hospital, with inter-communication facilities between houses. Outside calls are relayed to or from the Bell system to the Department's. All telephone installations and maintenance jobs are done by department electricians.

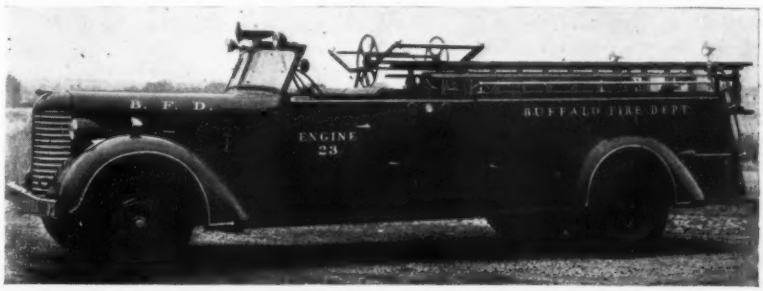
There are 716,623 conductor feet of underground cable, 198,946 of aerial cable, 21,900 of parkway cable and 730,000 feet of open wire, which are necessary to operate the circuits to the fire stations, boxes, and utilities. The underground cable, about 85% of the Department's circuits, is in New York Telephone and Fire Department subways. Open wires are on the crossarms of telephone and power company poles, with good clearance from power lines.

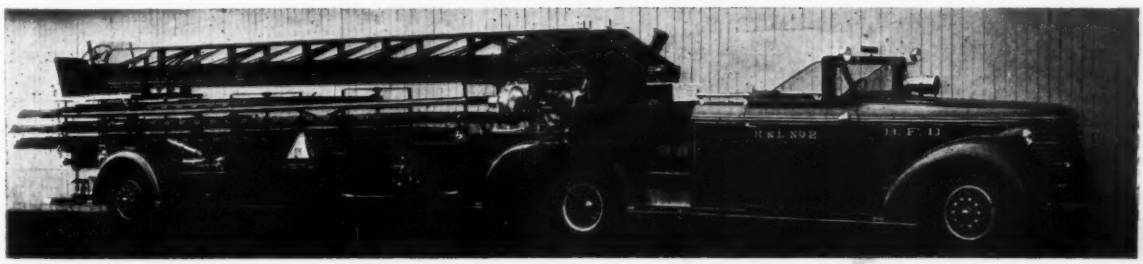
The Gamewell pull-box system comprises 1,307 fire-alarm boxes, 8 phantom boxes, 64 signal or box circuits, 10 alarm circuits, 10 joker or register circuits, and 6 telegraph circuits. Both interfering and non-interfering boxes are in use. The former will operate only four rounds and will cut in on any code that is being transmitted over that particular circuit, whereas the non-interfering box will cut out of the circuit and let another code come in, then drop back into circuit to finish four complete rounds of its own. All transmitted calls come into the central office, are set up, and then re-transmitted manually by operators.

Aside from transmitting an alarm over the fire-alarm circuits, there are such alternate facilities as telegraph, telephone (either Department or Bell system), a vocal-alarm system recently installed, and the 2-way short-wave Motorola radio system. The normal assignment on a first alarm is 3 engine companies, 2 hook-and-ladders, and 2 battalion chiefs.

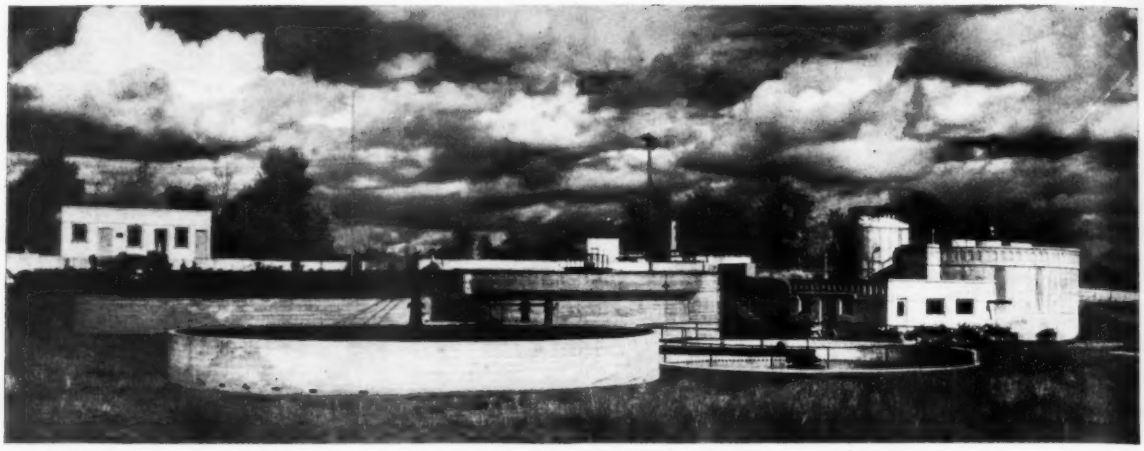
The Bureau of Fire Prevention, established in 1941, with one battalion chief, five firemen and a civilian stenographer, makes over 15,000 inspections a year. The Bureau conducts a continuous program of public education on fire hazards and proper precautions. For the last two years special attention has been given to the inspection of theaters, night clubs, and hotels.

The Department offices cover the entire 23rd and 24th floors of City Hall, and from this vantage point, Fire Commissioner Joseph S. Masterson, with telephones, radio, and the fire bell, is constantly in touch with activities.





New trucks, a Buffalo pumping engine and American LaFrance aerial ladder.



The government filter-built high-rate plant. The Vacuator placed ahead of the primary settling tank is at the right.

A Four Hundred Percent Overload

By H. LOREN THOMPSON
Partner, Stevens and Koon
Consulting Engineers
Portland, Ore.

INDUSTRIES are necessary for the economic development of any community. The problems they present are not solved by refusing to accept them into the city; they are solved by analyzing industrial wastes fully to understand how to treat them to avoid nuisance-creating and health-endangering stream pollution situations. Their problems are further clarified by an analysis of how these costs should be shared between the industry and the city.

Example of Overload

The city of Walla Walla, Wash., illustrates this. In 1928, this municipality built a sewage treatment plant of the standard rate trickling filter type with a maximum capacity of 6 mgd. At that time the sewage was primarily domestic with little industrial waste in it. Very naturally, neither city officials nor the engineers who designed the treatment works could foresee that Walla Walla was destined to become an important pea-processing center. But such a development did occur, and its effect on the treatment process has been tremendous.

The first pea-processing plant started its major operation in 1933. Two additional plants have been constructed since then; the latest started operating for the first time in 1946. The three plants have a processing capacity in excess of 1,100 tons of peas per day. No treatment plant designed to treat domestic sewage from a city of from 20,000 to 25,000 could be expected to function under such loading. The Walla Walla plant is no exception and during the pea-processing season the over-all reduction in BOD is practically nil.

Besides this main treatment works, the city operates a small government-constructed bio-filtration plant of two stages to treat a volume of sewage equivalent to that contributed by an army air base and hospital. The plant included a Dorr Vacuator having an effective diameter of 10 feet. The small plant operates constantly at a rate of 0.6 mgd, since the sewage is taken from the influent channel of the large plant through an adjustable gate. This arrangement was made since the sewage from an army installation was discharged into city sewers and transported to the treatment plant along with the sewage from Walla Walla.

The wastes from the pea-processing plants are treated by passing them through 40-mesh screens and by adding lime prior to their being discharged into city sewers. The wastes discharged into the sewers are green in color and very high in dissolved and colloidal solids. The screenings are used as stock feed.

The processing plants have their most intense periods of operation in July. The flow of pea waste from the Walla Walla Canning Company plant was approximately 2.0 mgd, as was that from the Libby plant. The flow of waste from the Birds Eye-Snider plant was estimated at 0.5 to 0.75 mgd. These are average figures, and there were some days when the total pea waste entering the sewage treatment works was estimated at 6.0 to 7.0 mgd. The results of the analyses of the pea wastes for the week of most intensive pea processing are given in Tables I, II, and III for the three plants.

The samples taken on July 3 and 6 were composites and represented particularly heavy days of operations at all plants. All peas are frozen at the Birds Eye-Snider plant while at the other two plants the peas are canned. The difference in strength of the wastes from these two types of operation is note-

TABLE I
Analyses of Wastes at Walla Walla Canning Company
(parts per million)

Date 1946	*Suspended Solids*	*BOD*
7-1	130	860
7-3	114	918
7-5	144	1,230
7-6	198	1,314
7-8	143	1,041

TABLE II
Analyses of Wastes at Libby, McNeill & Libby
(parts per million)

Date 1946	*Suspended Solids*	*BOD*
7-2	126	.....
7-3	193	1,056
7-5	256	1,134
7-6	209	1,128
7-8	177	939

TABLE III
Analyses of Wastes at Birds Eye-Snider Plant
(parts per million)

Date 1946	*Suspended Solids*	*BOD*
7-1	100	405
7-2	124	...
7-3	102	547
7-5	126	566
7-6	213	543
7-8	50	332

Seasonally the two trickling filter sewage treatment plants serving Walla Walla, Wash., one standard and one high-rate, receive a concentrated overload from the city's busy food processing industries. This study tells how they respond.

worthy. That the BOD of the waste from the freezing process is a little less than one-half of that from a canning operation is believed to be due to the shorter blanching period used in the former process.

The population equivalent of the wastes from the three pea-processing plants based upon the average BOD of the composite samples of July 3 and 6 was 230,000 approximately. This is based upon an assumed domestic flow of sewage of 100 gallons per capita daily and 0.17 pounds of oxygen per capita. Actually, the Birds Eye-Snider plant was not operating at full on these days. It should be noted, however, that expansion of this plant to double its present capacity is contemplated, so that within a year or two the total waste from the Birds Eye-Snider plant may exceed that from either of the others.

Table IV gives the analyses of raw sewage entering the treatment works during the week of most intensive pea processing and for a typical week following the pea-processing season.

TABLE IV

Analyses of Raw Sewage at Sewage Treatment Plant

(parts per million)

Date 1946	*Average Flow in mgd*	*Suspended Solids*	*BOD*
7-2	8.2	270	612
7-3*	7.4	210	303
7-5	7.3	223	600
7-6*	7.2	323	560
7-8	7.1	553	202
8-2	3.4	130	238
8-8	3.7	94	264
8-16*	3.4	188	140
8-17	3.3	397	347
8-24	3.1	204	266
8-28	3.7	102	...

* Composite samples (July 28 was the last day of pea processing).

The table clearly indicates the variation in the characteristics of the sewage in Walla Walla during and immediately following the pea-processing season. From these results it is obvious that a sewage of approximately 600 ppm BOD can be expected during the pea-processing season while only an occasional test would show above 300 ppm during the remainder of the year. Therefore, the plant to treat these wastes would have to be designed to treat over four times the organic load during the pea processing season than otherwise would be required, since not only is the flow more than doubled but its strength is twice that of the normal sewage also.

TABLE V

Main Plant Operating Results

(Parts per million)

Date of Sample	*Average Sewage Flow Mgd*	*Raw Sewage Suspended Solids*	*Raw Sewage BOD*	*Plant Effluent Suspended Solids*	*Plant Effluent BOD*	*% BOD Removals*
7-12	6.8	130	248	79	254	Neg.
7-18	6.1	587	390	102	223	42.8
7-24	5.1	186	273	74	210	23.1
7-31	3.4	505	360	85	75	79.2*
8-8	3.7	94	238	72	85	64.2
8-17	3.3	397	140	67	24	82.8
8-24	3.1	204	347	52	20	94.2
8-28	3.7	102	266	82	53	80.0

* Immediate recovery of filter was observed following the end of pea-processing on July 28.

Certain operating results were obtained of the main plant, with a standard trickling filter and the small government-built biofilter plant with a Vacuator ahead of the primary clarifiers. Table V indicates some of the results obtained from the main plant.

The immediate recovery of the standard trickling filter was remarkable. This indicates that even after a long period of serious overload the trickling filter will recover immediately when the organic load is reduced. The trickling filter has demonstrated many times that it can treat momentary overloads without serious deterioration of the effluent. However, with extended periods of overload the quality of the effluent will be reduced seriously, as indicated by Table V for the pea-processing season.

The operating results of the Vacuator are shown in Table VI. These figures indicate generally that good results can be expected from this unit. In this particular case the overflow rate is almost constant at 7,600 gallons per square foot of surface area per day since the inflow to the government plant is maintained very closely to 0.6 mgd. The aeration of the sewage just prior to its passing to the Vacuator affects the removal of the suspended solids materially, as does the maintenance of the required vacuum. By observing the influent and comparing it to the effluent from the Vacuator one can see improvement in the quality of the sewage since a noticeable reduction in the amount of settleable solids can be seen.

All during the pea-processing season the effluent of the government plant appeared to be very good. This was observed in spite of the 100% or more increase in the organic load treated by this two-stage biofilter. The volume of sewage was constant at about 0.6 mgd, but the BOD of the influent increased up to 600 or more parts per million, compared to a normal of 250 to 260 ppm. Some of the operating data are indicated in Table VII. The operating results check very closely with the empirical equations as reported in the

TABLE VI

Vacuator Operating Results

(Observation data only. Not sufficiently comprehensive for conclusions on operating efficiency.)

Parts per million

Date of Sample	*Raw Sewage Suspended Solids*	*Raw Sewage BOD*	*Vacuator Effluent Suspended Solids*	*Vacuator Effluent BOD*	*% Removal Suspended Solids*	*% Removal BOD*
7-3	210	612	226	537	...	10.5
7-5	223	303	166	206	25.0	32.0
7-6	323	600	248	575	41.5	4.2
7-9	159	...	104	...	34.6	...
7-12	130	248	95	288	27.1	...
7-17	417	382	249	351	52.0	8.0
7-20	355	359	246	323	30.7	10.0
7-29	156	129	135	122	13.5	5.4
8-2	130	202	143	142	...	29.6
8-8	94	238	65	266	30.9	...
8-24	204	347	165	213	19.2	38.6
				Average Removal %	29.4	17.3

(All samples were composites of several grab samples taken over a short period of time.)

Sewage Works Journal by the Committee which studied the operating results of sewage treatment plants at army installations.

This summarizes only the factual data and indicates the magnitude of the problem. From a sanitary engineering standpoint, it can, of course, be solved by any of several treatment methods. Some type of trickling filter application offers good possibilities because, just as has been demonstrated here, it does not surrender easily to overloads and at the same time recovers quickly when the overload passes. Chemical precipitation offers possibilities also to treat seasonally this overload without building excessively large treatment units for use only during periods of the year.

TABLE VII
Government Plant Operating Results
Parts per million

	Raw Sewage		Plant Effluent		
Date of Sample	Sus. Solids	BOD	Sus. Solids	BOD	% of BOD
7-20	355	359	55	37	89.7
7-29	156	129	49	18	85.3
8-2	130	202	36	0	100.0
8-8	94	238	14	25	89.4
8-24	204	347	16	7	97.8
		Average Removal %			92.6

At Walla Walla there are special considerations involved because of the practical necessity of utilizing as much as possible of the existing treatment works; but aside from this, the difficult problem lies in the field of finance rather than in that of engineering. Legal obstacles may hinder the city from financing the large and costly works, which are required only because great volumes of very strong sewage originate with a single industry and must be treated to such extent that a highly stable effluent from the plant will result. Again there may be strong resistance from citizens if asked to bear an expense from which only a few appear to benefit. This problem can be solved, but the manner of its accomplishment is not yet clear.

A Sludge Dewatering Development

Plainfield, N. J., sewage treatment plant uses a cord filter and a spray drier to dewater a hard-to-handle sludge.

NINE years of spray-drying a digested, thickened sludge with solids content of from 12% to 15% in Plainfield, N. J., has demonstrated a method of handling sludge successfully that is not amenable to conventional vacuum filtration. During the past year a series of full plant scale experiments utilizing a 150-square-foot vacuum filter equipped with cords instead of the conventional filter cloth has demonstrated how this combination of filter and drier can handle without difficulty the troublesome Plainfield sludge, and is indicated for general use in the dewatering and drying of sewage sludges. The cord filter maintains a constant hydraulic condition, and the operating characteristics of a spray drier are such that it permits simple, foolproof design analysis with subsequent operation as planned.

Thomas R. Komline pointed this out in a paper delivered before the joint meeting of the New York Sewage Works Association and the New England Sewage Works Association held recently in Albany, N. Y.

How difficult the sludge is to condition can be seen by the fact that it requires from 12% to 14% ferric chloride in order to be handled in the standard vacuum filter. Lime, or lime and iron in combination, gave a filtrate of poor quality, and there was a tendency for the filter cloth to blind.

In order to facilitate concentration of the sludge by vacuum filtration, the concern doing the development work on the spray-drying of filter cake decided to try a Titeflex-Wright cord filter attachment on its vacuum filter. This is similar to the attachment in use at Perth Amboy, N. J. (THE AMERICAN CITY for April 1946, Page 15.) The cords are 5/32 inch braided, 17,000 feet long shrunk to 13,600 by boiling one minute as wound. The filter worked successfully except for two difficulties.

Two Problems, and Solution

The first was that the aligning combs collected particles which would lodge in the grooved roller and cause the cords to jump from their proper places. This was corrected by giving a more thorough wash of the cords to insure removal of these particles. The cord wash-water was diverted to the conditioned sludge to be removed with the filtrate. The filtrate contained approximately from 20 ppm to 30 ppm of suspended solids.

The second difficulty was that the ferric chloride caused foaming of the sludge and blocked the flow to the filter. The operators corrected this by use of agitators that spread the foam and allowed it to be picked up with the filtered sludge.

One simplifying development in the filter consisted of using a single pump to evacuate the filtrate and entrained air. Conventionally, the vacuum filters have filtrate pump, vacuum pump, a receiver, and piping. However, investigation showed that a pump was available which would evacuate air, filtrate, and wash water in a single operation. The pump uses from 0.10 to 0.12 hp per square foot of filter area.

By using the cord filter the operators were able to cut the chemical dosage to from 5% to 6% and produce cake at the rate of 7 pounds per square foot of filter area per hour.

The spray-drying operation requires a bowl revolving with a peripheral speed equivalent to 21-inch diameter at 3,500 rpm, allowing the sludge to be extruded through small holes in the bowl. The bowl revolves in a drying chamber heated sufficiently to drive the water out of the small particles. Thermal analysis of the spray chamber requires a determination of how much water is to be evaporated per hour. This will give the following figures:

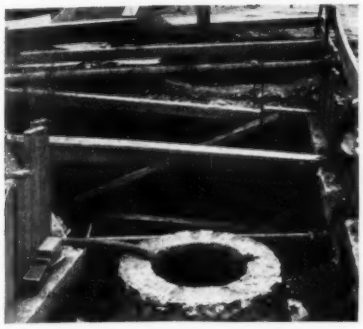
- The size of the spray chamber.
- The amount of air necessary to be circulated and the size of the fan.
- The BTU's needed for the apparatus, and in that manner the size of the furnace. At Plainfield, 1 cubic foot of furnace yields 15,000 BTU's.

The operation of the drier has disclosed certain significant cost figures. When the drier operates solely as a drier and requires supplementary fuel, it calls for a cost of $6.55 per thousand pounds of dry solids. When drying and burning some of the dried sludge as fuel, thus reducing the amount of supplementary required, it operates at a cost of $2.12 per thousand pounds of dried solids.

The operation at Plainfield has disclosed that it is important to keep the sludge moving both before and after conditioning to prevent classification and agglomeration. The chemicals must be constantly and uniformly applied with provision for screening to prevent clogging in the proportioning pump. Agitation of sludge within the filter vat should always be provided. And the conditioning tank should have vertical mixing arms to eliminate the need for stuffing boxes.

Cincinnati Studies Traffic Relief

Street construction and grade elimination program relieves traffic-overloaded arterial streets



Reading from top to bottom: 1. D. J. Donnelly, Public Works Inspector, A. D. Bird of Cincinnati's engineering staff, and R. W. Norton, Assistant Engineer, examine a concrete manhole brick. 2. A manhole laid with concrete brick. 3. A northwest backhoe and a small Caterpillar crane work on the Washington Avenue improvement. 4. Work under way at the Lincoln Avenue extension. A Jaeger truck mixer discharges onto the subgrade and into a bucket maneuvered by a Kohring crane for use on the far side.

TRAFFIC relief is being obtained in Cincinnati, Ohio, by a gradual process of relieving bottlenecked conditions. The Washington Avenue improvement is one example, and others are the Lincoln Avenue extension and the Hartwell Avenue grade separation.

The Washington Avenue improvement removes a horizontal offset in an existing street that is steep and winding. The improvement of this street will make possible the rerouting of certain traffic now using the heavily traveled Reading Road.

The street will be 76 feet in overall width and will carry extensive traffic channels to insure easy flow of traffic. The channelization has been carefully developed by the city engineering staff to avoid as much confusion as possible. Islands 20 feet wide will be used in the central portions of the improvement.

The pavement will be composed of air-entrained concrete eight inches thick and will be reinforced with mesh weighing 58 pounds per square yard placed 2½ inches below the finished surface. Side curbs are integral, 6½ inches high with a 1-inch batter. Curbing around large islands will be cast-in-place separate curb of white concrete with an area inside the curbs to be covered with 2-inch asphaltic concrete pavement on a stone base. Smaller islands will be built of solid white concrete placed on the street pavement. Curing in all cases will be accomplished with 10-ounce burlap kept wet for 72 hours.

The Lincoln Avenue extension serves as another means of relieving the traffic load on the busy Reading Road. This project, which is some 1,580 feet long, will provide a 40-foot concrete roadway for a connecting link in a crosstown thoroughfare extending from Woodburn Avenue on the east to Clinton Avenue on the west.

This pavement is of 9-inch thick concrete and has vinsol-resin added at the ready-mix plant for air entraining purposes. The pavement is reinforced with mesh weighing 58 pounds per square yard, placed 2½ inches below the surface. A longitudinal keyed-construction joint is specified along the center-line of the 40-foot slab. Concrete curbs, integral with the pavement, are 6½ inches high with a 1-inch batter.

The Hartwell Avenue and B. & O. grade-crossing elimination consists of the first project of this type that the city has undertaken for some time. In order to provide drainage, a good amount of sewer extensions was necessary, and to provide manholes, the city called for the use of a solid concrete brick because clay brick was not available. This substitute product meets the absorption, compaction, and flexure tests of common sewer brick, but it is not used in the inverts of manholes nor in lining brick sewers.

The grade separation involves 5,000 square yards of concrete pavement in addition to the structure. The structure will carry the Baltimore and Ohio tracks over a new 36-foot concrete pavement in Hartwell Ave., and will consist of part-through steel girders supported on steel bents at the curb lines and carrying a ballast deck for the double track.

The projects are part of a $1,500,000 program designed and constructed under the supervision of the City Engineering Department headed by H. H. Kranz, City Engineer.

Warning of Winter

When snow falls in Kansas City, Mo., it must be cleared promptly from key points like the important Union Station. This shows a Caterpillar diesel #12 clearing the station parking lot.

Winnipeg, Canada, Builds a New Incinerator

By W. D. HURST
City Engineer
Winnipeg, Canada

This one incinerator, centrally located, is economically preferable to a number of smaller scattered units.

THE City of Winnipeg has been disposing of its garbage by incineration since 1910. When it built two destructors, one located near the western city limits, and the other in the eastern part of the city, each originally had a capacity of 100 tons per 24 hours, but as they grew older they became less efficient and could not destroy the increasing amount of refuse delivered to them. As an undesirable alternative, the city placed the surplus on open dumps adjoining the sites. This, of course, led to widespread complaints; the garbage and refuse became ignited on the dumps and became smoke nuisances. In addition, the rat problem became increasingly serious and the dumps grew high, large, and odorous. In 1944, Dr. H. S. Lougheed, the medical health officer, under whose department the collection and disposal of garbage and refuse is accomplished, prevailed upon the City Council to take immediate action, and the author was asked to prepare a report on remedial measures. In May 1944, I reported to the Council that of all the varied methods in use for garbage disposal, that either (1) incineration, or (2) grinding of pulp, disposal in the sewers, and treatment at the sewage treatment plant, seemed to be the most practical method for the city. Regarding incineration, the report pointed out:

(a) That one single plant is preferable to multiple plants; the extra cost of longer hauls being overbalanced by lower first cost and lower carrying, operating, and maintenance charges.

(b) That the plant should be crane-fed, have a storage pit, and operate from 16 to 24 hours daily with collections being made in 8 hours.

(c) That conventional design, proved in practice, should be adopted.

(d) That the location should be well thought out, owing to psychological considerations (imagined nuisances) and to the large quantities of ash produced (being from 10% to 15% of the daily refuse by weight). Low-lying land is usually required for its disposal.

(e) That all the heat developed should be used to maintain high temperatures in the furnaces and not diverted for auxiliary purposes, such as heating adjacent buildings.

I also pointed out in regard to grinding, disposal in the sewers, and treatment at the sewage treatment plant:

(a) That the process is gaining in favor.

(b) That the capital costs chargeable to garbage disposal are usually lower than separate incineration, as are maintenance and operating charges.

(c) That separate incineration of tin cans, bottles, and other heavy rubbish is required, and, as a consequence, an extra collection is needed.

(d) That grinding plants are inclined to be noisy and their location should be selected carefully.

(e) That ground garbage should be fed into the trunk sewers and not directly into the treatment plant.

(f) Additional digester and filter capacity is required at the treatment plant, for the solids load is approximately doubled, as is the methane gas production.

(g) That the gas produced can be used for driving automotive equipment or for electric-power production through gas engines.

(h) That the City should investigate the merits of the garbage grinding method thoroughly, particularly in view of the large expenditure required for separate incineration of all the city's refuse, and inasmuch as garbage grinding may be the most acceptable method of garbage disposal in the future.

The Council then asked the Commissioners of the Greater Winnepeg Sanitary District for a report on the ability of this corporation to take care of ground garbage in its sewage treatment plant. The Commissioners reported on June 21, 1944, that if Winnipeg's garbage were added to the sewage flow, the capacity of the sewage treatment plant would have to be enlarged; the capital cost of the sewage treatment plant extension would probably be as great as the capital cost of a new incinerator, and legal complications might arise from the fact that one of the members of the metropolitan district was using the plant for a specific purpose from which the other members were excluded.

Incineration Continued

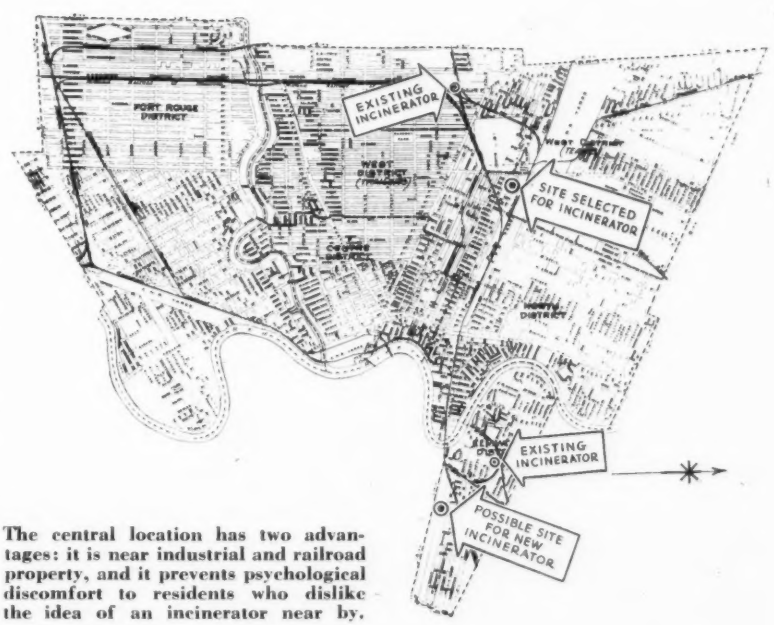
In view of the Commissioners' report, Council decided to adopt, or rather continue, incineration of garbage.

Accordingly, I was asked to make a further report on capital and operating charges for:

(1) the modernization of the existing incinerators, and

(2) a new single incinerator, or alternatively, two or more incinerators for the destruction of mixed garbage and refuse, and

(3) satisfactory locations for the new unit or units.



The central location has two advantages: it is near industrial and railroad property, and it prevents psychological discomfort to residents who dislike the idea of an incinerator near by.

Existing Incinerators

I reported on October 2, 1944, that the existing incinerators could be satisfactorily modernized, but that the location of these incinerators was uneconomical in regard to the collection of garbage, which is the biggest factor in refuse collection, and that the capital and operating costs of a new unit or units were comparable to the modernization of the old. I also pointed out that a single plant was more economical in both capital and operating costs than two or more plants.

In regard to the site, I pointed out:

From the individual point of view, the best site is that farthest away from the person concerned.

Purely from the point of view of economics, the best site is that centrally located with respect to the collection areas. The modern high-temperature refuse destructor does not create nuisances, except the esthetic nuisance of garbage collection vehicles passing the door to get to the destructor. The famous Cornell Medical Center in New York is located within a few blocks of a 400-ton destructor, and Cleveland's 900-ton destructor is within half a mile of the public square and shopping center of Cleveland.

Following the receipt of these reports, Council placed a money by-law before the ratepayers for the construction of a new single-plant, mixed garbage and refuse destructor, to cost $550.000.00. The ratepayers approved the expenditure by the largest favorable majority ever experienced for a money by-law.

Report on Sites

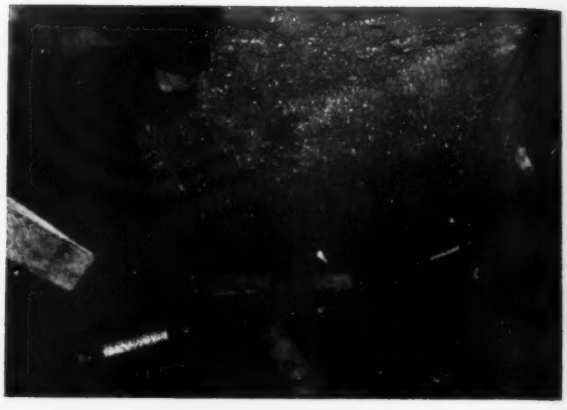
On my recommendation, the Council retained the firm of Greeley and Hansen, Consulting Engineers, Chicago, Ill., to report on sites, capacity, project plan, and procedure, and to design and supervise construction of the new plant.

The consulting engineers analyzed two possible sites; one near the center of gravity of the collection area, and the other near the extreme eastern side of the city. It was believed that the environmental factors of both sites were strictly comparable, since both sites were in industrial districts and well isolated from any residential areas. The economic factor was the governing one, and the central site was recommended to the Council and was approved at once.

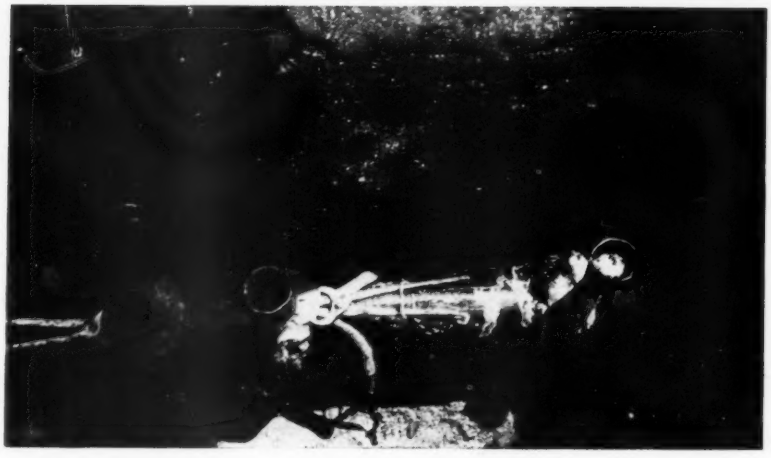
A Pipe Cleaning

By JOHN E. KLEINHENZ
Indianapolis Water Company
Indianapolis, Ind.

Water works men look on as preliminary steps in the main cleaning demonstration start. In the background is a portable Wallace and Tiernan chlorinator.



Foreman Ora Cloud inserts the scraper into the end of the pipe. Top Right: Scraper is in place, awaiting reinstallation of the missing pipe section.



Workmen now close the gap in the main and recaulk the joints. The pouring-gates are still in place. The trial run of the scraping mechanism is now ready to go.

EARLY arrivals at the Indiana section meeting of the American Water Works Association witnessed a demonstration of water main cleaning put on by the National Water Main Cleaning Company, New York, in a section of the Indianapolis Water Company systems. The exact location was Division Street north of Oliver Ave., and the section was roughly 1,300 feet of 6-inch main installed back in 1897, 50 years ago.

Following established procedure, the operators first cut out a section of the main, installed the spring steel cleaning tool with the expanding cup on the rear, and reconnected the main. Next they brought two auxiliary pumps into action to put water into the upper end of the main to be cleaned from a fire hydrant a block away. The water under pressure, varying from 70 to 90 pounds psi, sent the cleaning tool, often nicknamed "rabbit" or "go-devil," through the 1,300 feet of pipe in 13 minutes and 45 seconds, or nearly 100 feet a minute.

Hydrants opened ahead of the cleaning tool allowed the water to escape. The water was very dirty, resulting from the removal of the tubercules inside the main. After the tool had passed by, the hydrants were closed.

At the south end of the main, sleeves and elbows connected to the pipe brought the water to the surface of the street. At first, the water was clear, but as the tool neared, the water blackened until, with a surge, the "rabbit" jumped out of its hole and landed on the pile of encrustations and tuberculations scraped from the inside of the pipe.

Chlorine Dosage

The water pumped into the section of main being cleaned carried a chlo-

Demonstration

Indiana water works men learn at first-hand how to clean a water main and watch how the cleaning boosts the flow to a full sixty percent.

rine dosage of approximately 300 ppm. the chlorine being applied to the water by a Wallace and Tiernan Emergency Portable Chlorinator. At the point of discharge immediately after the emergence of the "rabbit," the water contained a residual chlorine content of approximately 22 ppm. Thirty minutes afterward, the residual had increased to 36 ppm. This water was allowed to remain in the pipe for about an hour before the main was flushed and returned to service.

To demonstrate the efficiency of the cleaning system, the company made tests prior to cleaning and following the work. These tests showed a pressure before cleaning of 65 pounds psi static, and 22 pounds flowing with a delivery of 395 gallons per minute. After cleaning with a static pressure of 69 pounds psi, the delivery was increased to 660 gallons per minute with a residual pressure of 33 pounds. This gave the line an increase in capacity of almost exactly sixty percent.

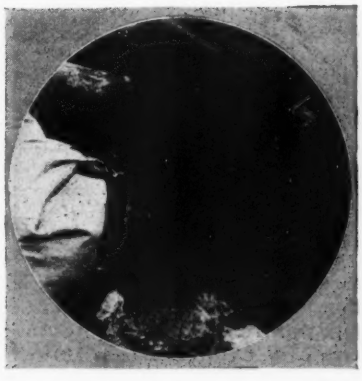
The work was under the general supervision of Lewis S. Finch, Chief Engineer, Indianapolis Water Company, and James R. Brown, National Water Main Cleaning Company, New York, N. Y.

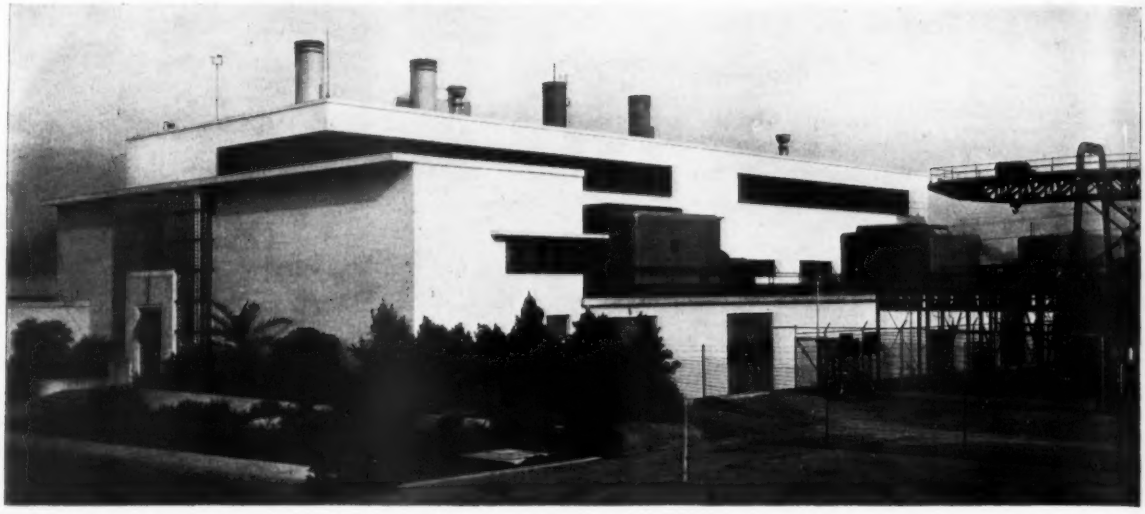
This is the end where the scraper will emerge. It will climb this riser pipe and appear on the street.

The water becomes discolored with tubercules as the scraper moves along the main.

Here is the scraper just at the moment it made its journey through the 1,300-foot pipe line, reappearing at the other end.

This shows the pile of encrustations whose removal means the boosting of pipeline flow capacity by sixty percent.





Burbank's steam-generating plant, built in 1944, takes advantage of California sunshine by using a semi open-air design.

Burbank's Power Story

. . . starting from a small, defunct distribution system, this municipal service now furnishes nearly 200 million kw-hrs per year.

By J. H. McCAMBRIDGE
General Manager
Burbank, Calif.

IN a previous article the growth of the City of Burbank's municipally owned water system was traced to the present and the plans for its future expansion were divulged. In this article, Burbank's electric system will be similarly discussed.

Shortly after Burbank became an incorporated city (population 515), in July, 1911, the Board of Trustees petitioned the Pacific Light and Power Company to establish an electric distribution system. The company responded by requesting a bonus of $8,000 for accepting the franchise. In June, 1912, the Board sold the franchise for $850 to G. H. Deacon, who organized the Burbank Light & Power Company. The limited finances of the new company were completely exhausted before a working system was established.

At a special election in March, 1913, a bond issue of $20,000 was voted for the establishment of a municipally owned and operated electrical system. Purchase of the defunct Burbank Light & Power Company's equipment was made and the installation of a working system completed. Power for the new distribution system was purchased from the Southern California Edison Company at 2,200 volts, 3-phase, 50 cycles. Primary distribution was made at this voltage, with delivery to the city's thousand inhabitants available at 110 volts.

In the fall of 1929 negotiations were started for an allotment of the energy to be produced by the proposed "Hoover Dam." In November, 1931, the city entered into a fifty-year contract with the United States to purchase 25,000,000 kw-hrs per year from this source, starting in 1937 when energy was scheduled to become available. A fifty-year contract was signed with the City of Los Angeles to deliver this energy together with its own allotment of energy from the source, over its proposed 287,500-volt transmission lines.

Steam-Electric Generating Plant

An additional source of power supply was required in 1938, as system loads and demands by then exceeded the fixed allotment from Hoover Dam. These additional power requirements were supplied from the excess capacity available from an adjacent municipal utility system. It was expected that such excess capacity would be available for a number of years, after which the city would engage in its own generation when an annual load factor on a generating plant of at least 25% would be assured. In 1939, development of new industrial loads and increases in domestic and commercial loads led to the decision to install a 10,000-kw steam-electric generating plant.

Design and construction of the generating plant was made by the city's forces, and plant operations started in October 1941. During the interval between decision and realization of the plant, system demands had so greatly increased that an even greater power deficiency existed. Installation of a second 10,000-kw generating unit was started immediately, and by the time of its completion in July 1943, the power deficiency had further increased. Even with the high priorities under which materials and equipment for the second generating unit were obtained, deliveries had become so uncertain that no attempt was made to secure priorities for the construction of a third unit.

The two 10,000-kw units operate at a pressure and temperature of 625 pounds, 850 degrees, and are of the semi-outdoor type, as is shown in the photograph.

Present Status of System Load

The municipal electric system successfully met all demands placed upon it during the war, giving service remarkably free from interruption or failure. This latter point is highly significant in view of the lack of system reserves and with the overloaded lines and equipment under which operations were conducted.

With the Lockheed plants still engaged in the production of military planes, present system loads are not entirely free of war-load; new loads,

however, are very nearly offsetting the reduction in war-load. System peak demand for May 1947 was 33,000 kw as compared with 36,000 kw for March 1945, the month of greatest recorded demand and consumption. Energy sales to new loads at a higher average selling price is tending to maintain gross revenues at their former high level. In comparing sales of 1946 with those of 1944, it is found that while the kw-hrs dropped off 17.9%, gross revenue decreased less than 0.1%.

On January 1, 1944, a rate reduction of 8.9% was put into effect, which made Burbank rates approximately equal to the lowest in the state.

BURBANK'S ELECTRIC POWER EARNINGS

	1946			1944		
Class of Consumer	*Sales in kw-hrs*	*Gross revenue*	*Average cents kw-hr selling price*	*Sales in kw-hrs*	*Gross revenue*	*Average cents kw-hr selling price*
Residential....	27,909,646	$ 674,618.52	2.417¢	21,246,506	$ 543,951.68	2.560¢
Commercial...	20,481,196	412,564.57	2.0144	16,954,738	316,694.84	1.8679
Industrial.....	111,273,442	864,799.53	0.77¢	159,659,093	1,107,844.83	.6939
Other.....	11,077,763	136,664.89	1.2337	10,139,681	122,172.72	0.2049
Total sales..	170,742,047	$2,088,647.51	1.2233	208,000,018	$2,090,664.07	1.0051

Expansion and Replacement

A program of major importance is now under way with the specific objectives of (1) relieving overloads on the system, (2) re-establishing system reserves so necessary to insure reliability, (3) picking up a back-log of six years of pole-line maintenance, the postponement of which has wiped out safety factors.

Deficiency in system generating capacity is currently being overcome through purchase of excess capacity from adjacent municipal utility systems. Availability of such power is, however, on a non-firm basis.

Orders have been placed for all major items of equipment for a 20,000-kw, 850-lb., 900°, hydrogen-cooled generating unit. This plant will be located adjacent to, but independent of, the existing plant consisting of two 10,000-kw units. Completion of the new plant is scheduled for the winter of 1948-1949. With its high efficiency, approximately 550-kw-hrs per barrel of oil (incremental), the new unit will be used largely for base load operation. With 40,000 kws of generating capacity in addition to its allotment from Hoover Dam, Burbank will be able to supply all its system requirements.

Several modifications are planned for the Burbank Receiving and Distributing Station, including the addition of a 25,000-kva transformer bank and relating facilities for receiving the output from the new generating unit. The transformation from generated voltage of 13,800 volts to 34,500 volts will tie the new unit into the transmission system. Orders have been placed for the transformer bank and circuit breakers for this work, which will cost $175,000.

Distribution to all consumers, with the exception of three large industrial plants served from the 34.5-kv system, is from two stations. The economic limit has been reached for the number and lengths of feeders from these stations, and additional distributing-station capacity is required for serving new loads and relieving the overloaded feeders. A new station of 20,000 kva is being constructed in the western side of the city for this purpose. The new station is scheduled to be placed in operation early in 1948 at a cost of $200,000.

The transmission system now consists of eight sections of 34.5-kv transmission line. Excellent protection for these lines is afforded by the recently completed installation of a pilot-wire relaying system. However, necessity for greater flexibility in switching operations requires additional circuit breakers and busses at an estimated installed cost of $150,000.

Pole-line maintenance and replacement, which is normally a continuous function, has been deferred for the past six years because of shortages in materials and man-power. Many poles are now so completely rotted that they are a menace to safety. Picking up the backlog of deferred maintenance and replacement of pole lines is estimated to cost approximately $175,000, and is now under way.

Another phase of distribution-system

INVENTORY OF MAJOR EQUIPMENT FOR BURBANK, CALIF., STEAM-ELECTRIC UNITS

	Unit No. 1	Unit No. 2	Unit No. 3
Main Turbine.....	10,000 Kw 80% PF Allis-Chalmers	10,000 Kw 80% PF Allis-Chalmers	20,000 Kw 80% PF Allis-Chalmers
Steam Gen. Unit.....	2—120,000 lbs./hr. 625 lb.—825° Babcock & Wilcox	120,000 lbs./hr. 625 lb.—825° Babcock & Wilcox	215,000 lbs./hr 850 lb.—900° Combustion Eng.
Condenser.....	8,000 sq. ft. Elliott Co.	8,300 sq. ft. Elliott Co.	18,000 sq. ft. Elliott Co.
Circulating Pumps...	10,000 GPM, Ingersoll-Rand 100 HP Elliott motor 10,000 GPM, Ingersoll-Rand 100 HP Elliott motor	10,000 GPM, Ingersoll-Rand 200 HP Gen. Elec. motor 6,500 GPM, Ingersoll-Rand 75 HP Gen. Elec. motor	20,000 GPM, Ingersoll-Rand 250 HP Gen. Elec. motor 12,000 GPM, Ingersoll-Rand 150 HP Gen. Elec. motor
Feedwater Pumps.....	4—210 GPM at 900 psig. Byron Jackson 4—200 HP Gen. Elec. motors	2—210 GPM at 900 psig. Byron Jackson 2—200 HP Gen. Elec. motors	2—370 GPM at 1,200 psig. 6 stage centrifugal Worthington 2—400 HP Elliott motors
Fans.....	2—2 speed, Sturtevant 2—300 HP and 75 HP in tandem, Gen. Elec. motors	2 speed, Sturtevant 300 HP and 75 HP in tandem, Gen. Elec. motors	2 speed, Sturtevant 250 HP on forced draft, Westinghouse 300 HP on induced draft, Westinghouse
Cooling Tower.....	Induced mechanical draft 6 cell, Marley Co. 6—25 HP Sterling motors	Induced mechanical draft 6 cell, Marley Co. 6—25 HP Sterling motors	Not yet awarded
De-aerator	Cochrane Corp.	Cochrane Corp.	Not yet awarded
Feedwater Heaters.....	Struthers-Wells	Struthers-Wells	Not yet awarded
Comb. Control System	Bailey Meter Co.	Bailey Meter Co.	Not yet awarded
High-Pressure Piping..	Chapman Valve	Chapman Valve	Not yet awarded
Switchgear.....	General Electric	General Electric	Not yet awarded
Main Transformers...	10,000 Kva, O.I.S.C. Moloney	10,000 Kva, O.I.S.C. Allis-Chalmers	25,000 Kva, O.I.S.C. Westinghouse
Aux. Power Trans....	1,000 Kva, O.I.S.C.	1,000 Kva, O.I.S.C. Gardner Trans. Co.	3,750 Kva, O.I.S.C. Allis-Chalmers

NEW 20,000-KVA DISTRIBUTING STATION

Transformers.....2—10,000 Kva, O.I.S.C., Pennsylvania Transformer Co.
Circuit Breakers.....34.5 Kv O.C.B. and 4.3 Kv O.C.B., Kelman Electric & Mfg. Co.

In accordance with California state law governing purchase by municipalities, all the items listed above were obtained through competitive bids. The bids were based on specifications prepared by Burbank Public Service Department.

maintenance similarly deferred is that of transformers, service drops, and domestic meters. Present shortages of transformers, copper wire, and meters may necessitate the further postponement of this work, the estimated cost of which is $60,000.

The city's street lighting system, typical of many, is woefully deficient and obsolete. Plans are being engineered to modernize the lighting system for high-intensity lighting, using 20,000-lumen mercury vapor lamps on thoroughfares. Lamp spacing for residential areas will be reduced to a maximum of 350 feet between lamps. This portion of the street lighting program is of a long-range nature and will cost approximately $400,000. A recently completed lighting improvement was the rehabilitation of a very old ornamental street lighting installation at a cost of $17,000. Another lighting project to be undertaken shortly is the $80,000 installation on one of the city's major thoroughfares.

Increasing load density in the downtown shopping district is making distribution from overhead lines a difficult problem which can be solved only through use of underground distribution. This conversion will cost approximately $205,000, but will not be undertaken until the more critically needed projects are completed.

Operations are severely handicapped by the lack of office space, shops, and warehouse capacity. Plans for a two-story office building have been on file for the past two years, awaiting only more favorable building conditions. The estimated cost of the office building is $450,000. Repair shops and a materials warehouse at a cost of $85,000 are also planned.

Financing

Total cost of the electric system expansion program is nearly $4,000,000, an amount 13% greater than the depreciated book value of the existing plant. Nevertheless, the entire program is to be undertaken without benefit of bond issue or other outside financial assistance. Completion of the program will require approximately six years, and with a present total bonded indebtedness of less than $150,000, nearly all net income accruing during this period will be available for financing the program. This income, together with funds now on hand, will finance the entire program.

Central Mailroom Speeds and Saves

No more confusion in mail distribution with Rochester's new mailroom.

By W. RAYMOND WHITLEY
Comptroller
City of Rochester, N. Y.

FORMER mail handling problems of the City of Rochester, N. Y., have been solved by a central mailroom in the City Hall. The new system was worked out by the Comptroller's office in consultation with George F. Harrington of Commercial Controls Corporation, Rochester, manufacturers of mailroom equipment.

The city's annual mailing exceeds one million pieces, with special mailings running over 100,000 pieces at a time. Concerted handling was further hampered by the fact that many of Rochester's municipal departments are located outside of City Hall.

The central mailroom, which went into operation the first of this year, is located in the basement of City Hall. Use of this central mailroom is compulsory for those municipal offices in the building, and voluntary for those outside. It is operated under the direction of the finance department.

All mail originating from City Hall is brought down twice daily to the mailroom, and, with the exception of confidential correspondence, is sealed and meter-stamped by the mail machine. Confidential mail is sealed in the office of its origin, but metered by the machine.

From the angle of the incoming mail, the central mailroom offers special advantages. A major portion of this mail comprises inquiries, each of which must be channeled to the right office or person for reply. Prior to the establishment of the central mailroom, there was some confusion in distributing mail to the proper office. Such inquiries are expedited now because mailroom personnel are familiar with the various departments and their individual duties.

The first run of mail through the new machine was in December 1946, when 60,000 city and county bills were sent out, and 10,000 envelopes were handled per hour. The finance department states that the advantages of the machine include less drudgery, fewer man-hours, and greater efficiency, accuracy, and economy.

This USPM metered-mail machine handles up to 10,000 envelopes an hour.

Leaf-gathering costs lowered by

The Lexington, Ky., Leaf Baler

You can gather leaves on city streets with a lightweight baler, easily moved by the crew, and operated by men who are experienced in handling baling wire.

EVERYONE seemed agreed that it would never work—that you never could expect to bale short, slippery leaves successfully. But City Engineer M. J. McGruder, raised on an Iowa farm, recalled that when his father baled alfalfa, he made a strong solid bundle out of the short stubby ends as well as the long ones. He also knew that there was nothing more annoyingly inefficient than trying to pick up dry leaves by hand on a windy day. In the fall of 1940, Engineer McGruder bought a J. L. Case baler and decided to give it a try. If it were unsuccessful, as everyone from the city manager down to the last common laborer seemed to think it would be, he could always sell the baler to some famer as it was not a very expensive piece of equipment.

Baler Arouses Curiosity

He decided to try out the baler in an obscure corner of one of the city's parks, so that if it did not work, he could quietly and unostentatiously slip it back to the city garage and hope that no one noticed his unhappy experiment. His crews, however, had piled up great mountains of leaves in some of the better residential areas, and as a result he decided to let his experiment succeed or fail before the critical eye of the people in those sections. He could not escape observation anyway. Too many people were following him around to see how the baler would work.

Experiment a Success

The baler almost seemed to appreciate that a former farm boy's reputation depended on how it worked, because it started right off pounding out solid, easily handled bales of leaves that could be stacked cleanly on a truck and hauled away. Engineer McGruder's critical laborers and bystanders first looked surprised and then became enthusiastic.

But then an unexpected development occurred. A Lexington nurseryman drove by in a pickup truck, saw the leaves, and asked if he could have them. "Sure," said Engineer McGruder, "take them away;" he was only going to haul them to the dump anyway. The nurseryman got out, loaded his pickup truck with as many bales as the truck could handle, and drove off. A short time later this same nurseryman sent around a larger truck and picked up another load. Later in the day, another nurseryman drove by, and he asked angrily why the city was giving the leaves to his rival and not to him.

"Help yourself," said Engineer McGruder, and he dispatched the truck which he had assigned to leaf hauling to do other work around the city.

From then on the leaf-hauling end of the work was virtually over. Nurserymen, garden-wise householders, and others would line up to get some of those leaves. Engineer McGruder took one bale home himself to see how it would work. He wet it down thoroughly and covered it with dirt. The next spring he had the finest pile of composted leaves that he had ever seen.

Hints for Operation

The baler needs to be light, he explains. It should be light enough so that a crew can push it around. You need a man operating the baler who can judge how tight to make the baling wire. With wet leaves the wire should be fairly loose, and with dry leaves, fairly tight. By using the baler you will compact the leaves into a volume less than 25% of that occupied by the loose leaves and will be able to put them into packages that are cleaner and easier to haul, even if you don't have obliging nurserymen.

Prestressed Concrete

An inflation antidote in the municipal-construction field.

By L. COFF
Consulting Engineer
New York, N. Y.

IF MATERIAL and labor costs rise, is there any way to keep construction costs down? Is there any balancing factor that can brace us against this squeeze?

There is for structural framing. Prestressed concrete—hitherto limited to such uses as pressure pipes and storage tanks—is now beginning to be considered as an economical factor in reducing the costs of load-bearing structures. It is known to provide more head room and wider spans at no greater cost and to be used in the planning of elevated highways, grade separations, covering of railway cuts, parking garages, underpasses, and the like.

It has not been considered so far as general building material because methods were not evolved to adapt it successfully to American labor conditions for everyday construction.

However, it is likely that its economy under many conditions should be stressed, as against the cost of conventional reinforced concrete structures. It is known that concrete structures are over-designed, which is what they must be, because their theory is based on a series of expedients and inconsistencies. While adequate and extremely safe work was achieved on this theory, there is plenty of room for a better use of the materials—concrete and steel—and thereby important savings. Engineers will agree that even though concrete does its best work in compression, and steel in tension, we use only a small part of the potential strength and effectiveness of the materials. Take a simple beam supported at each end, and apply a load on the middle. We all know that the underside of the beam will be in tension, and the upper fibers will be in compression. We also know that concrete does an unreliable job of assuming tensile loads—so poor that we ignore entirely its effect and depend wholly on the steel to carry this portion of the load.

We further know that whatever the strength of the steel we propose using, we cannot stress it beyond a certain point, because however little we elongate the steel, the concrete bonded to it on the underside will crack.

In prestressed concrete, on the other hand, the steel is a tie stressed to anything compatible with its strength and imparts to the concrete its maximum safe compression. All of the material is utilized to the best advantage, and the economy is, therefore, bound to be considerable.

Let me give you one example, that of a multiple-story garage with bays approximately 60 feet square. The estimate shows that prestressing the concrete will reduce the cost of framing by 25%, amounting in this instance to several hundred thousand dollars.

We in the United States seem to have limited our use of this system to such applications as pressure pipes and storage tanks. These consist of thin concrete cylinders wrapped with tensioned rods or wire that compress the tanks, offsetting the outward pressure of the contents. This principle is similar to that of the barrel with iron hoops around wooden staves.

Advantages

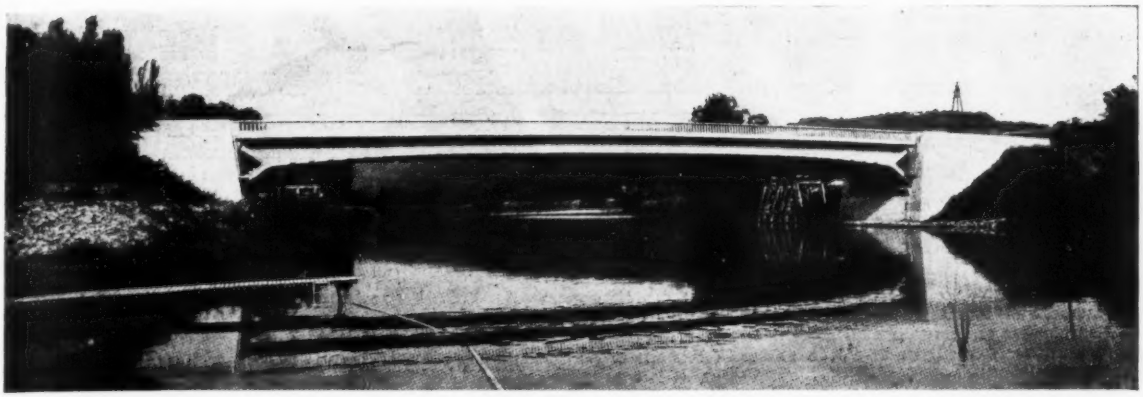
The importance of prestressed concrete goes much farther than that. You can make a beam of much shallower depth do the same work and thereby get for yourself valuable head room for viaducts, underpasses, and subway structures. You can safely extend the span of bridges and elevated highway construction, cutting down on expensive abutments, and at the same time adding to the grace and beauty of the finished structure. You can capitalize on its use for underground structures since it will require less excavating for the shallow structural section.

There are additional technical advantages also. Crackless concrete is one of them—important where waterproof construction is required. Where concrete is above ground and exposed to weather, there are benefits of lessened maintenance costs.

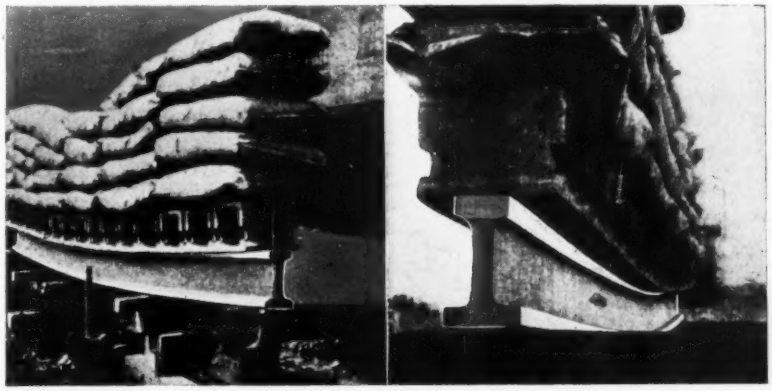
Erection also is simplified. Prestressing allows the designer to place construction joints wherever convenient. They disappear completely when the tensioned reinforcement pre-compresses the concrete. One can tie together pre-cast concrete units and use them successfully for long spans. The deflection of such structures can be accurately controlled by arranging the ties below the center of a section to produce an arching effect. Prestressed concrete is now playing an important role in European reconstruction, after having been used extensively shortly before and during the war. The German speedways, for example, used a number of them in overpasses of 110-foot span. In 1936, the Germans built a river separation structure of 220-foot span and used prestressed tie rods in arches as early as 1928. In France, the famous Plougastel bridge with three spans of 660 feet—of which one was blown up by the Germans on their retreat from Brest in Brittany in 1944—was a combined highway and railway bridge which Freyssinet handed over to the traffic in 1931. Many hangars with spans of 150 feet and over were built shortly before and during the war in several European countries, as well as in India. The Germans used prestressed concrete for covering their submarine pens. Railroad bridges with spans of up to 66 feet, on Professor George Magnel's designs, stood up very well on the important railroad lines within Brussels. The same distinguished engineer designed structures for carrying pipelines over long spans, constructed by the Royal Canadian Engineers when they entered Belgium in 1944. The Swiss federal railroads used prestressed concrete for a number of short-span highway and railroad bridges, as well as for galleries for protection from avalanches.

In France a year ago, Eugene Freyssinet completed a highway girder bridge of 180-foot span with the phenomenally shallow depth of only 4 feet 2 inches at the center. It goes over the Marne in the neighborhood of Chateau Thierry. Five other bridges of the same system are in the course of erection. In England, a series of less spectacular structures have been and are being built.

Here in America, this method of construction was mentioned not long ago as the big future of reinforced concrete in as competent a gathering as that of the American Concrete Institute Convention. Yet very little has been done with it besides using it for pressure pipes and circular storage tanks. Patent tie-ups are to some extent re-



This graceful structure is Eugene Freyssinet's 180-foot highway bridge over the Marne at Luzancy near Chateau-Thierry. During testing a year ago, it carried a train of 20-ton trucks. In one of the tests, the trucks were made to hurdle over wooden ledges at a speed of over 10 miles per hour in order to test the resilience against impact. While the measured deflections are less than 1/1900 of the span, the depth of the center is only 4 ft. 2 in. This is less than 1/40 of the span, a proportion unheard of even for steel bridges. The main girders are made from precast hollow sections 8 feet long, tied together by a tensioned wire assembly.



The resilient beam, outlined in white, is constructed of concrete. It contains stretched wire ties anchored in their tensioned condition, which will lengthen as the beam deflects with a strong tendency to recover their original length. If the beam is heavily overloaded, cracks may appear at the under side. When the beam is unloaded, however, shortening of the ties straightens it out completely, and the cracks close, leaving no traces.

sponsible. However, this cannot be considered the main reason, inasmuch as fundamental patents were filed in this country as far back as 1923, were granted in 1928, and are now public property.

The main reason for its slow adoption here is that European methods—the only ones used for important prestressed structures—don't fit well with American conditions. A most efficient and distinguished American contractor tried prestressed concrete with similar methods—and was disappointed. The savings in materials were overwhelming, but the cost of labor was excessive. The European approach to prestressing necessitates a multitude of small manual operations, involving great attention and requiring the closest supervision. Prestressing has to be geared to our special labor conditions. This is important now because, painful as the shortage of certain materials may be, the great cost-booster is the inadequate supply of efficient labor.

Great efforts have been made in the past few years to reduce the need for labor in prestressing to a minimum. Schorer and Billner made important contributions to the solution of the problem. One of the most effective steps, however, is the adaptation of wire rope and cable to this use.

The suspension bridge has been used in this country more extensively than anywhere else, and with considerable success, for the largest spans in existence. The technique of handling wire rope and cable has been brought to great perfection. We know what fittings and tools to use with safety and economy to hold, stress, and fix a cable. This is the essence of the problem of prestressing, which was solved over here long before we knew its application to concrete.

To resume: any structure, of whatever size, can be built safely and efficiently by the use of prestressed concrete. Each case must be considered in the light of over-all economy. If an office building is to be designed with spans of 20 feet with normal head room, conventional methods would be fully adequate. But if the spans go over 30 feet, and a story may be gained in a multiple-story building in order to comply with zoning regulations, prestressing will pay dividends.

In addition, for underpasses, subways, tunnels, and any other structure where cracks or leakages would be a source of continuous worry and expense, prestressing will pay, even if there is no original saving.

Elaborate Rededication Programs

Prepared for cities to be visited by the "Freedom Train"

MORE than 300 communities throughout the country will have an opportunity for full participation in the elaborate "rededication" program of the American Heritage Foundation. The program is to be highlighted in each city by the arrival of the "Freedom Train," a specially constructed three-car traveling exhibit containing more than 100 of the most significant original documents of American history.

Endorsed by the President and sponsored by the Attorney General of the United States, the American Heritage Foundation program was inaugurated at a White House conference in May of this year. Financed through private contributions, the citizens' campaign is entirely non-partisan, non-political, and non-controversial.*

Itinerary

The start of the national "Year of Rededication" and the itinerary of the Freedom Train will be on the 160th anniversary of the signing of the Constitution in Philadelphia, September 17. In connection with the Freedom Train tour, it is proposed that each community visited proclaim and organize a Community Rededication Week, to be climaxed by the train's arrival. The itinerary of the Freedom Train through November 22 is published at the right, to aid most municipal officials and civic leaders in communities near the actual display points of the train who may also wish to take part in rededication ceremonies and activities.

Objectives

The main purposes of the American Heritage Foundation program are:

1. To make every citizen understand and appreciate the development and present significance of his heritage of freedom.

2. To make every citizen realize that he must take an active part in the daily life of this democracy, and that he has definite obligations as a citizen in order to preserve and increase his freedoms.

To fullfil the objectives of helping to raise the level of active citizenship, local community committees will have available carefully planned and coordinated campaign material making use of every possible medium of publicity and advertising.

A typical time table for a model community program, as outlined by the Heritage Foundation, will be as follows:

The Attorney General will write an introductory letter to the mayor of the community which the train is to visit, informing him about the Heritage plan. The letter requests the mayor to appoint within one week a large and representative committee to conduct the Community Rededication Week. The Heritage Foundation follows up with another letter, advising the mayor that its area representative will arrive in the city one week later to present to the entire committee complete details and literature about the program. His arrival and meeting with the local committee is six weeks before the start of the local fourteen-day rededication period.

The local committee then embarks on a two-week period of intensive preparation for every detail of its program, after which the Foundation's area representative again visits the community to assist and advise in the organizational and promotional problems. He checks once more on the progress of preparations in the city two weeks later.

Advance Publicity

Fourteen days before the arrival of the train, one week of advance public promotion is begun to interest the community in the coming events of Rededication Week. During this advance period, use is made of every local medium of advertising, publicity, and display; the radio, newspapers, motion pictures, etc.

The big week finally arrives, and various special days are scheduled for each major community group, such as: Veterans' Day, Inter-faith Day, Labor Day, Commerce and Industry Day, School Day, etc. The week may start with a mass meeting conducted by the mayor with outstanding personalities as guests. The municipal government and every type of organization participate in the observance and promotion of the rededication message. A simple but moving rededication pledge is repeated by audiences at the special events and exercises.

On the last day of the week the Freedom Train arrives, and the three exhibit cars are stationed early in the morning on an accessible siding in the downtown area. Parades to the train and ceremonies of welcome are conducted. The mayor signs the Rededication Pledge scroll carried on the train, in behalf of the community, and the three cars containing the famous historical documents are then opened for public inspection during the time the train remains in that city.

City	Week of Rededication	Arrival of Train
Philadelphia, Pa.	Sept. 12-19	Sept. 17-18-19
Atlantic City, N. J.	Sept. 14-20	Sept. 20
Trenton, N. J.	Sept. 15-21	Sept. 21
Elizabeth, N. J.	Sept. 17-23	Sept. 22
Patterson, N. J.	Sept. 18-24	Sept. 23
New York, N. Y.	Sept. 20-26	Sept. 25-26
Brooklyn, N. Y.	Sept. 21-27	Sept. 27
Queens, N. Y.	Sept. 22-28	Sept. 28
Van Nest, Westchester, N. Y.	Sept. 24-30	Sept. 30
Stamford, Conn.	Sept. 25-Oct. 1	Oct. 1
Bridgeport, Conn.	Sept. 26-Oct. 2	Oct. 2
Waterbury, Conn.	Sept. 27-Oct. 3	Oct. 3
Hartford, Conn.	Sept. 28-Oct. 4	Oct. 4
New Haven, Conn.	Sept. 29-Oct. 5	Oct. 5
New London, Conn.	Oct. 1- 7	Oct. 7
Providence, R. I.	Oct. 2- 8	Oct. 8
Worcester, Mass.	Oct. 3- 9	Oct. 9
Lynn, Mass.	Oct. 4-10	Oct. 10
Boston, Mass., North Station	Oct. 5-11	Oct. 11
Boston, Mass., South Station	Oct. 6-12	Oct. 12
Rutland, Vt.	Oct. 7-13	Oct. 13
Burlington, Vt.	Oct. 9-15	Oct. 15
Montpelier, Vt.	Oct. 10-16	Oct. 16
Concord, N. H.	Oct. 11-17	Oct. 17
Nashua, N. H.	Oct. 12-18	Oct. 18
Lowell, Mass.	Oct. 13-19	Oct. 19
Lawrence, Mass.	Oct. 15-21	Oct. 21
Haverhill, Mass.	Oct. 16-22	Oct. 22
Dover, N. H.	Oct. 17-23	Oct. 23
Augusta, Me.	Oct. 18-24	Oct. 24
Bangor, Me.	Oct. 19-25	Oct. 25
Lewiston, Me.	Oct. 20-26	Oct. 26
Portland, Me.	Oct. 21-27	Oct. 27
Fitchburg, Mass.	Oct. 23-29	Oct. 29
Springfield, Mass.	Oct. 24-30	Oct. 30
Pittsfield, Mass.	Oct. 25-31	Oct. 31
Schenectady, N. Y.	Oct. 26-Nov. 1	Nov. 1
Utica, N. Y.	Oct. 27-Nov. 2	Nov. 2
Rome, N. Y.	Oct. 29-Nov. 4	Nov. 4
Syracuse, N. Y.	Oct. 30-Nov. 5	Nov. 5
Rochester, N. Y.	Oct. 31-Nov. 6	Nov. 6
Elmira, N. Y.	Nov. 2- 8	Nov. 8
Buffalo, N. Y.	Nov. 1- 7	Nov. 7
Binghamton, N. Y.	Nov. 3- 9	Nov. 9
Albany, N. Y.	Nov. 5-11	Nov. 11
Scranton, Pa.	Nov. 6-12	Nov. 12
Wilkes-Barre, Pa.	Nov. 7-13	Nov. 13
Williamsport, Pa.	Nov. 8-14	Nov. 14
Altoona, Pa.	Nov. 9-15	Nov. 15
Harrisburg, Pa.	Nov. 10-16	Nov. 16
Reading, Pa.	Nov. 12-18	Nov. 18
Allentown, Pa.	Nov. 13-19	Nov. 19
Chester, Pa.	Nov. 14-20	Nov. 20
Wilmington, Del.	Nov. 15-21	Nov. 21
Salisbury, Md.	Nov. 16-22	Nov. 22

* Winthrop W. Aldrich is Chairman of the representative Board of Trustees, with William Green, Robert G. Sproul, and Philip Murray serving as Vice-chairmen. Thomas D'A. Brophy is President of the Foundation, and Louis A. Nevins is Vice-president and Secretary.

† Further information about the Freedom Train and the American Heritage Foundation program may be obtained from the Foundation's offices, 17 East 45th St., New York 17, N. Y.

Segregation Is Not The Answer

A discussion of the racial issue in its relation to slum clearance and low-rent housing programs. Four problems and four possible answers.

By CHARLES LIVERMORE

A RACIAL issue threatens the future of the slum clearance and the public housing program. This fact is clouded at the moment because shortages make large-scale slum clearance impractical for many cities. To tear down any existing housing, no matter how bad it is, seems impossible. But as the general shortage is alleviated the issue will become clear.

Four Aspects of the Problem

Let's review a few aspects of the slum problem:

First: In most cities, a disproportionate share of the slum housing is occupied by Negro families. The war demands for labor brought thousands of Negroes from the southern cities and rural areas to the North, where they inherited the cast-offs of preceding generations of urban immigrants. In Buffalo, for example, it is estimated that 60% of the immigration to the city to meet the labor demand in the war plants was composed of Negro workers. Yet few new sections of the city were open to them.

Second: Most *good* private housing is barred to Negroes because of restrictive covenants and so-called "gentlemen's agreements" among landlords and real estate men.

Third: Most vacant land is on the outskirts of most cities, usually in predominantly white areas.

Fourth: The jamming of Negro families into narrow ghettos has inflated the value of slum property and made it some of the most profitable real estate to own in many cities. In most cities, Negroes occupy many houses for which there would be no demand at all in ordinary times, were it not for the restrictive agreements which force their utilization of slums.

Now let's see what has happened to the public housing and slum clearance program that deals with these facts. Although local housing authorities have assumed that race relations was none of their business, they have, in many cities, taken an unusual course for public agencies in the North by establishing a pattern of segregation. They have not done this because they were biased or prejudiced. Members of housing agencies often deny any personal conviction in the matter.

Attempts to Justify

In many cases, housing officials justify a policy of discrimination with the argument that they would never be able to fill up their houses with anything except Negro families if they took the families most in need regardless of their race. Some are confused and deny segregation policies, even where they are apparent, and attribute the result to chance. Often the policy is justified because Negroes are said to prefer segregation, as evidenced by the fact that they often live in solid communities. Some undoubtedly believe that Negroes and whites cannot live together in the same block. In many cities before the war, excluding cities like Chicago and Detroit, there was not a large Negro population to worry about, and protests against segregation came from such a numerically insignificant group that they were disregarded.

In the first years of the public housing program, a few slums were cleared. In some cities, the housing authorities claimed success for their slum clearance program by counting all of the houses that were demolished or just plain fell down anywhere in town as part of the slum clearance program.

As the war came on, the idea of slum clearance became even more of an illusion. In Buffalo, before an extension could be built onto one of the existing housing projects a temporary shelter had to be made out of an old factory, in order to re-locate the families taken off the site of the proposed extension. This temporary shelter seems likely to remain as a part of the city's housing supply for some years to come. Its reconversion cost was nearly as high as the cost of new housing before the war.

Racial Islands Won't Work

In most cities today, any effort to evict and re-locate even a few hundred families will create a crisis for the local housing authority.

The answer is obviously to build on vacant land and then rebuild the slums, partly with public housing and partly with privately financed housing, after the pressure and the profiteering are gone. The demand for slums is not inexhaustible; strict enforcement of health and building codes could prevent the re-renting of substandard units made vacant by tenants moving into public housing.

But at this point, the public objects. To rehouse slum dwellers is to rehouse many Negro families, and this has too often involved a long and bitter search for a site for "Negro housing." Who wants a "racial" island planted in the middle of his neighborhood?

The public housing authorities that want segregated racial islands in white areas are saying: "We believe that Negroes and whites can't live together in the community of the housing project, but we are going to make Negroes and whites get along in the larger community in which the project is located." This is an invitation to disaster.

Institutions Affected

There are many neighborhood institutions that are worth thinking about—churches and schools, for example—that are affected by population movements. Given a cross section of the community, the neighborhood can absorb a new influx and prosper. It just happens that often the sites that are suggested for housing projects are contiguous to predominantly Roman Catholic neighborhoods. Negroes are largely Protestant, and religious differences serve to heighten "racial feelings." The day after a site selection has been announced for "Negro housing," the city council and the mayor may have a delegation on their hands. Episodes like this, repeated in Buffalo, Detroit, Chicago, and other cities, have confused the public and complicated the problem of defending the public housing program from the continuing opposition of the real estate interests.

It has been suggested in answer to this problem that the slums be cleared a little at a time, and Negro families be rehoused in the same areas they now occupy. The answer to that one is that it just can't be done. The main reason is that there are far more

Negroes living in slums than could qualify for public housing as we know it. If one is a Negro and has $50 per month to spend for rent, there is a good chance that it will buy a private toilet, but it probably will not buy a back yard for the kids. Negroes earning good money have to live in slums as well as poor Negroes—it's very democratic. And we can't build public housing for people who have $50 to spend on rent.

The other half of the story works out against such a plan too. Private builders, to build on slum land, even though resold to them at use value, would have to charge more than most Negro families can afford. As a matter of fact, if replanned in the public interest, many areas now occupied by slums could be potential sources of substantial tax revenues for our sagging municipal budgets. Slum-occupied land is usually centrally located, near downtown offices, and doesn't require a tremendous outlay in public utilities and services to make usable for redevelopment. Most cities realize that they have to find a way to bring the suburban refugees from urban confusion back to the cities. City planners eye the blighted areas and envisage apartment house developments along the lines of intramural green belts. Good luck to them.

Four Suggestions

What's the answer? The real estate interests say, "Now is the time to end the public housing program. Look at the mess it has got us into. Racial trouble—riots. Give us the subsidy to fix up the slums and everyone can stay where he is—no fuss, no bother—just repeal a law." Well, there's a trick in that. For some marginal areas rehabilitation might not be a bad idea, but the sad fact is that every city has a big hunk of slums that just can't be fixed up. It's just too far gone. Traffic is so bad that much of the area around the heart of a city needs to be redesigned to open up new traffic outlets, to say nothing of the need for more play space and playgrounds.

What then? I'd suggest four things:

First: Start building unsegregated housing on vacant land. There are a number of practical concessions that can be made without sacrificing the principle that no groups will be segregated, which is the most serious form of discrimination in public housing. There are over three hundred projects managed this way now to show that it will work.

Second: Start building now while the demand is high. A fair share of the waiting lists that public housing agencies have acquired is made up of veterans. And it would be a good way of organizing the veterans' housing program at rentals that most veterans, just beginning employment and not earning too much, can afford. Few of them will be millionaires in the two or three years it takes to build a housing project. Preference to veterans will assure a racial cross section. Also, since they fought for democracy, they might well appreciate an effort to make it work.

Third: Rethink the human side of tenant selection and management and employ people who are skilled in getting people to work together to help in the process. Dont have the employes say, as I have heard one remark to an applicant for a unit in a non-segregated housing project, "I know it is awful to mix people up this way, but what are you going to do with the shortage as bad as it is?"

Fourth: Let the new Public Housing Administration force local housing authorities to respect state laws concerning discrimination, just as they have to respect state and local laws concerning building.

My business is human relations and I have found that people have more sense than people give them credit for. There are many things that most folks won't fight about, particularly when it means hurting someone else. The idea to live and let live is stronger than any prejudice I ever ran into north of the Mason-Dixon Line—and in a lot of places south of it.

But segregation is not the answer.

The author of the foregoing article is Executive Director of the Board of Community Relations of the city of Buffalo, N. Y. He had previously served as a consultant for the Social Protection Division of the Federal Security Agency.

Cities Back Racial Amity Units

CITY-FINANCED agencies aimed at improvement of race relations are being created in an increasing number of cities, according to the American Municipal Association.

Twenty-five cities now have race-relations groups in operation, all of them established since 1943. In eighteen of these cities, the racial amity agencies are backed by public funds.

In at least nine of these cities, public subsidy agencies designed to improve race relations amounts to more than $10,000. These cities are Buffalo, Chicago, Cincinnati, Cleveland, Detroit, Minneapolis, New Rochelle, New York, and Seattle. Race-relations budgets for 1947 in these cities total $207,000.

Eight cities have established the groups as definite departments of the city government by ordinance. These cities are Brookline, Mass.; Buffalo, N. Y.; Cincinnati; Cleveland; Passaic, N. J.; Pittsburgh; Rockford, Ill., and Toledo. In Toledo, funds and staff have not yet provided.

In Los Angeles, the Committee on Human Relations was created by county, rather than city, legislative action. In the remaining sixteen cities, the racial amity groups were created by formal or informal action of the mayor.

Reducing racial discrimination among employers and broadening the field of employment for minority groups through vocational education also are increasingly important activities of the racial unity groups.

Race relations activities are coupled with fair employment ordinances in three of these cities—Chicago, Milwaukee, and Minneapolis. Among the states, New York, New Jersey, and Massachusetts have enacted anti-discrimination laws. Indiana and Wisconsin have similar statutes, but not provisions for penalties.

Indiana also has a law, just enacted, making it unlawful to "conspire, organize, or associate for the purpose of spreading malicious hatred by reason of race, color or religion against any person or persons not alien enemies of the United States." The penalty is disfranchisement, barring from any public office for ten years, a maximum $10,000 fine, and imprisonment up to two years.

Minnesota Authorizes Slum Clearance Tax

MINNESOTA recently became the first state to enact legislation empowering its cities to levy a special tax to finance slum clearance.

The National Association of Housing Officials reports that Indiana has a similar law in effect, but it applies only to Indianapolis. Minnesota authorizes the special redevelopment tax for all municipalities.

The tax is limited to 10 cents per $100 property valuation for the first two years of its application, and 5 cents per $100 thereafter. Funds from the tax may be used for redevelopment only, to be administered by dual-purpose local public housing and redevelopment authorities.

UN Headquarters Report Receives Wide Acclaim

CREDIT: OFFICIAL UNITED NATIONS PHOTO

Artist's perspective, drawn by Hugh Ferriss, of United Nations Permanent Headquarters, looking southwest from East River.

RECEIVED with general praise and approval as an outstanding and workmanlike job of composite planning, the newly issued report entitled "Permanent Headquarters of the United Nations" * by the Secretary-General is expected to influence city building and redevelopment patterns and methods throughout the world. The architecture of the proposed group of buildings, presently estimated to cost $84,000,000, has primarily been determined by the organization of the United Nations and its functions.

Design Makes Most of Site

The site is not a large one, but its location off New York's East River, and the disregard which has been shown by the designers for the existing street pattern within the site seem to insure that the headquarters will have light, air, a view, and a sense of spaciousness rarely found in congested areas of large cities.

The present report has been based on the efforts of Walter K. Harrison, Director of Planning, and his Board of Design Consultants, composed of internationally known experts in architecture and engineering. Actual building designs will be contained in a supplementary report to the General Assembly, although the present publication describes in some detail specific aspects of how the buildings will appear.

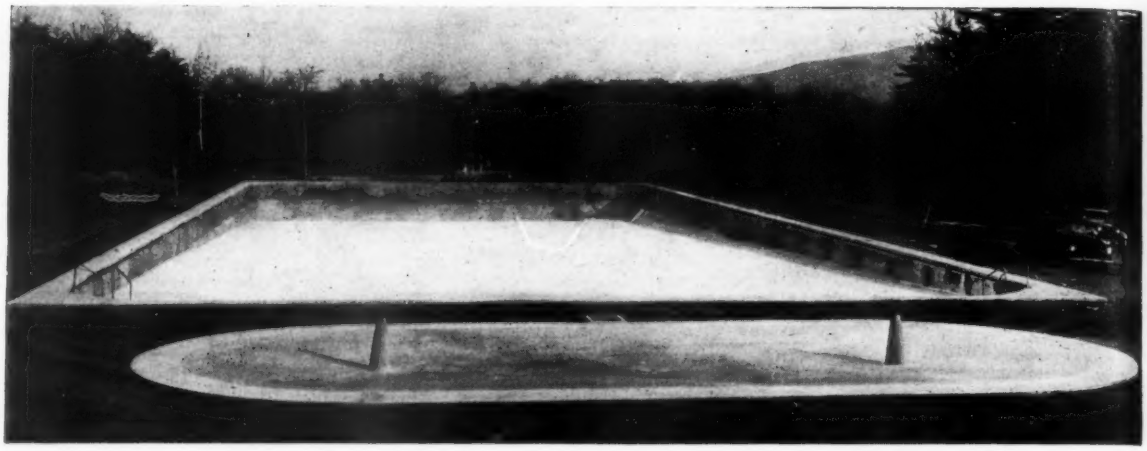
Workshop for Peace

The completed building group will have majesty and beauty, but the primary concern has been to produce an efficient "workship for peace." At the south end of the area will be the skyscraper office building of the Secretariat, expected to be forty-five stories in height. Between the Secretariat tower and the river will be a low flat building, housing four conference chambers, the council halls of the Security, Economic and Social, and Trusteeship Councils, a library, a delegates' lounge, dining facilities, and press areas. In the center of the site will be the imposing General Assembly Hall, opening onto a broad plaza. The public entrance lobby will be at this point, giving direct access to an esplanade leading down Forty-seventh Street from the midtown area. The above three elements of the design are all interrelated and connected. A thirty-story building for delegations and specialized agencies at the north end of the site is still in the preliminary planning stage.

The report emphasizes the need for redeveloping much of the land adjacent to the U. N. headquarters in order to provide an appropriate and effective setting. One long-range development proposed is that the East River waterfront in Queens, directly across the river, be transformed into a vast residential and recreation area to serve United Nations personnel. The question of additional housing and existing facilities for U. N. personnel also receives considerable attention in the report.

Communications, air conditioning, acoustics, and circulation of vehicle and pedestrian traffic within and to and from the site have been some of the major problems given careful study by the designers. The necessity of planning for flexibility and expansion has been recognized. Of special interest is the value given to relaxation and recreation of U. N. personnel within the headquarters site and the importance of pleasant surroundings that will afford opportunities for delegates, Secretariat, and Press to get to know each other on an informal basis during "off hours."

* See p. 151 for a review of the report. For further information on the site, its acquisition and New York City's part in the transactions, see THE AMERICAN CITY for May 1947, "*New York Prepares for the United Nations*," by Ruth G. Weintraub and Rosalind Tough, p. 67.



Attractive swimming pool in Palmerton, Pa. The wading pool is shown in foreground.

Palmerton's Living Memorial

A year-round twenty-five-acre recreational area with swimming pool, skating rink, and picnic grounds constitutes this community's tribute to its war dead.

ON a wooded hill overlooking the little city of Palmerton, Pa., is a memorial to the men and women who left their homes and joined the ranks of the armed services in defense of their country. Palmerton built no cold statues to commemorate them. It built instead a memorial that will play an important and continuing role in its community life. For by community action, this little city of 8,000 has built itself a 25-acre memorial park complete with swimming pool, ice skating rink, and picnic area, and has done this by unselfish, concentrated, community action.

This memorial park is no haphazard affair. Its swimming pool is large and professionally constructed, measuring 90 by 225 feet and able to accommodate about 2,500 people. It also includes a wading pool for small children, fenced off from the main pool for safety.

Both the main pool and the children's wading pool rest on 6 inches of 1½-inch crushed limestone in which are placed 4-inch perforated tile pipe leading to the park creek, thus caring for all subsurface water and underground springs which were in evidence during construction.

The swimming pool has a capacity of 690,700 gallons and the wading pool 4,650 gallons. The total of 695,350 gallons is recirculated once every eight hours by a 1,510-gpm Ingersoll-Rand centrifugal pump, driven by a G. E. 30-hp motor. During recirculation, the water is given an application of alum and soda ash by Wallace and Tiernan dry chemical feeders and is filtered through a set of four 8-by-18-foot Roberts pressure filters. The filtered water receives a final sterilizing application of chlorine from a Wallace and Tiernan chlorinator. A Taylor pH and chlorine-residual test set helps the operator maintain a residual that will not become an annoyance to the swimmers.

Night Skating

The pool uses Transite pipe with cast-iron fittings to recirculate the water between the pool and the filter plant. Palmerton officials have learned that this is the first time that Transite pipe was ever used on a swimming pool installation.

The filtered and treated water is introduced into the main pool through 41 inlets and is charged from the scum gutter through 60 outlets, all equipped with Josam fittings.

The pool uses American Playground Device Co. equipment consisting of ten ladders, a 3-meter diving board, two 1-meter boards and a life-guard's chair.

The entire pool and children's wading pool will be surrounded by a grass sun-bathing area from the edge of a 10-foot concrete walk at the pool to the 7-foot-high Atlas Fence Company wire fence.

The pool itself was built by the Cement Gun Co., Inc., Allentown, Pa., by the Gunite process, giving a smooth, dense, and attractive surface. The Gunite surface is painted with two coats of green Medusa Portland Cement paint.

For winter recreation, the area contains an ice-skating pond built last fall and measuring about an acre in area. The pond was constructed by removing the top soil and then grading the hard impervious clay beneath and erecting a clay berm around the area. The berm is 5 or 6 feet thick and 2 feet high. When filled, the water depth is 7 inches at the center and 18 inches at the berm. This made it a safe, fast-freezing ice-skating pond which was used to capacity all last winter. Four 1,000-watt floodlights gave splendid illumination for night skating, which was permitted until 10:00 PM. At that time the shaved ice was scraped off by the skaters with steel snow pushers and the ice surface sprayed by the park

attendant, freezing overnight and providing a new, smooth surface for the next day's skating. There was no admission charge; all operating expenses such as floodlighting, pumping power costs, and snow removal were borne by the local Board of Trade. The ice-skating pond takes on summer service as a ball diamond.

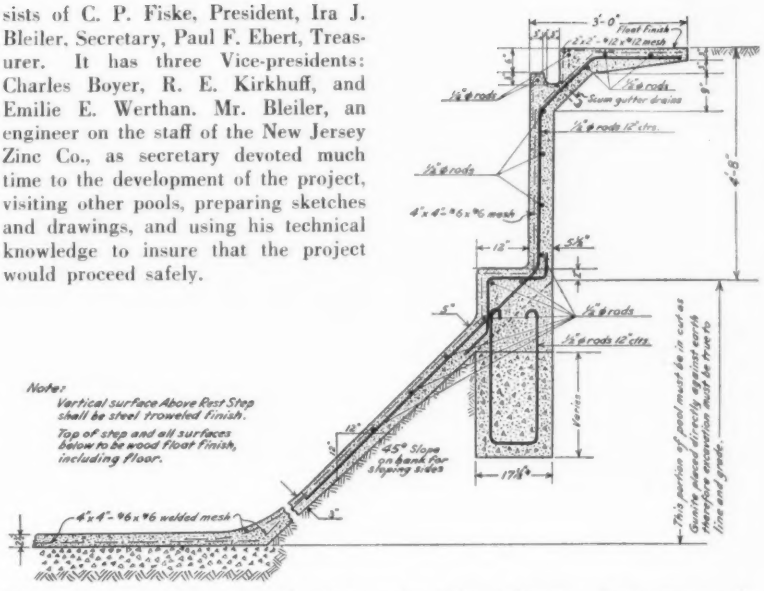
How the Project Was Financed

However, carefully prepared as the design and construction of the improvements have been, they perhaps must take second place to the spontaneous community-wide support that made the park possible. Before the war, business people recognized the need for some type of improved recreational area, but their plans, never very well formed, did not proceed beyond the talking stage and were buried beneath the responsibilities that the war imposed.

In 1943, however, the Palmerton Board of Trade again brought up the idea, and this time it was met with such interest and enthusiasm that officials decided to see how much of this was sincere by launching a non-profit Memorial Park Association formed for the purpose of promoting and building such a civic improvement. This association called for members who would subscribe one dollar or more, and almost immediately found itself with a treasury of $50,000. The New Jersey Zinc Company, one of whose important refineries is located in Palmerton, contributed, in addition to a substantial amount over and above this sum of $50,000, engineering assistance that gave assurance that the project would be well-designed and constructed. Moreover, the community itself purchased the original tract of 18 acres, and later added a 7-acre tract. Other than that, no tax money has been used on the project. All have been contributions from the people, business firms, and industry. The solicitation thus far has totaled $127,607 and funds are still being received. Thus swimming-pool admissions will be required for operation only, and not for any capital investment.

The reaction of veterans and civic groups to the improvement has been unanimously favorable. Ramon Carazo, the first Palmerton boy to receive wounds in action during World War II, wrote home to say that he felt the project a great boost to help future generations in his community. Harrison Gruber, a naval officer who served aboard the U. S. Tucson, wrote home also to say that "the Memorial Park idea is swell. Its more of a living tribute to the boys who will not come home. I am sure that they would all answer 'aye' to a vote on it."

The Memorial Park Association consists of C. P. Fiske, President, Ira J. Bleiler, Secretary, Paul F. Ebert, Treasurer. It has three Vice-presidents: Charles Boyer, R. E. Kirkhuff, and Emilie E. Werthan. Mr. Bleiler, an engineer on the staff of the New Jersey Zinc Co., as secretary devoted much time to the development of the project, visiting other pools, preparing sketches and drawings, and using his technical knowledge to insure that the project would proceed safely.


Note:
Vertical surface Above Rest Step shall be steel troweled finish.
Top of step and all surfaces below to be wood float finish, including floor.
45° Slope on bank for sloping sides
4"x4"-#6x#6 welded mesh
This portion of pool must be in cut as Gunite placed directly against earth excavation must be true to line and grade.

Here is a typical section at the deep end of the Palmerton Pool. Notice the ledge built for the convenience of the swimmers. Below: the pool in use.

Cincinnati Starts Topographical Survey

THE work of bringing up to date a thirty-five-year-old survey is now under way in Cincinnati, Ohio. In 1912, this city completed a detailed topographic map that has been used extensively in planning and other municipal improvements. Cincinnati's extensive development, however, particularly around the city's fringes, has made the preparation of another map mandatory. The work is being conducted in cooperation with the U. S. Coast and Geodetic Survey, with the city contributing to the cost and the Survey contributing key personnel and instruments.

In all, 53,000 acres will be covered by this survey. More than one hundred maps in four colors with two-foot contours will be prepared. The maps will be on a 1-inch-to-200-feet scale. It will be coordinated with air surveys that will cover the whole country with state mapping systems, including all existing bench marks and monuments. The work will take from three to six years.

The completed maps will assist in planning drainage, subdivisions, street layouts and many other problems which are pertinent to Cincinnati's growth. The work is being accomplished under the direction of H. H. Kranz, City Engineer.

Presidential Reorganization Plan Consolidates Federal Housing Functions

ALL THE principal permanent housing agencies and functions of the federal government, and the remaining emergency housing activities, have now been grouped into a *Housing and Home Finance Agency*, according to the provisions of a presidential reorganization plan approved by the Senate before its adjournment. Interim appointments have been made by the President which are subject to confirmation by the Senate upon the return of Congress next January.

Under the new over-all agency, as constituent parts of it, are the following: *A Home Loan Bank Board* to administer the Federal Savings and Loan Insurance Corporation, the Home Owners' Loan Corporation, and the functions of the Federal Home Loan Bank Board and its members; a *Federal Housing Administration* with the same functions as now provided by law for that agency; a *Public Housing Administration* to take over the functions of the United States Housing Authority and certain remaining emergency housing activities that are now being liquidated. Each agency is to have its own identity and to be responsible for the operation of its program. A *National Housing Council* is also created, on which are represented other federal departments and agencies having important housing functions, such as the Veterans' Administration, Reconstruction Finance Corporation, and Department of Agriculture.

The office of Raymond M. Foley, administrator of the Housing and Home Finance Agency, will be concerned with the coordination of the broad Federal housing policies and supervision of the constituent agencies.

The Constituent Agencies

The FHA organization, which is now receiving a record volume of applications for mortgage insurance, remains substantially the same.

The only significant change in the Home Loan Bank Board is the appointment of a three-man board under the Plan in place of a single Commissioner. John H. Fahey, whose term as Commissioner expired just a few days before the Plan went into effect, has been appointed Chairman of the new Board.

An extensive internal reorganization of the Public Housing Administration (formerly the FPHA) has been necessitated because of the reduced appropriations for that agency made by Congress. For administrative expenses, $15,600,000 was requested and $11,500,000 was appropriated. For the annual contributions low-rent program, $7,200,000 was requested and $4,000,000 was appropriated. Also, under the appropriation bill, only 20% of the total personnel employed in the agency may be paid $4,500 or more. Another provision eliminates the current authority granted by FPHA for local authorities to make payments in lieu of taxes up to 10% in shelter rents, and limits such payments to the amount, if any, specified in the original contract.

Following are other interim appointments made by the President:

Commissioner, Federal Housing Administration, Franklin D. Richards of Utah; Commissioner, Public Housing Administration, Dillon S. Myer of Ohio; Members of the Home Loan Bank Board, in addition to Mr. Fahey, the Chairman, are Nathaniel Dyke, Jr., of Arkansas, and J. Alston Adams of New Jersey.

Practical Advances In the Mechanics of Tax Billing

TAX delinquencies are just about at an all-time low level, according to a paper presented by Frederick L. Bird, Dun & Bradstreet Inc., New York, at the 1947 Conference of the Municipal Finance Officers Association.

The median tax delinquency ratio of 150 cities of 50,000 population or more in 1946 was 3.2% as compared with 3.3% in 1945. In 1939, twenty-eight of these cities had ratios of upward of 20% and one hundred had year-end delinquencies of 8% or more; in 1946 only six cities reported a similarly high percentage.

The reasons for tax delinquency were discussed by W. W. Gardhouse, York County Treasurer, Toronto, Canada. He ascribed it to too-high taxes, wrong assessments, weak collection methods, poor public relations, too heavy a tax burden on real property, and lack of city planning and balanced development. He recommended selling taxpayers on the value they are receiving on their dollar.

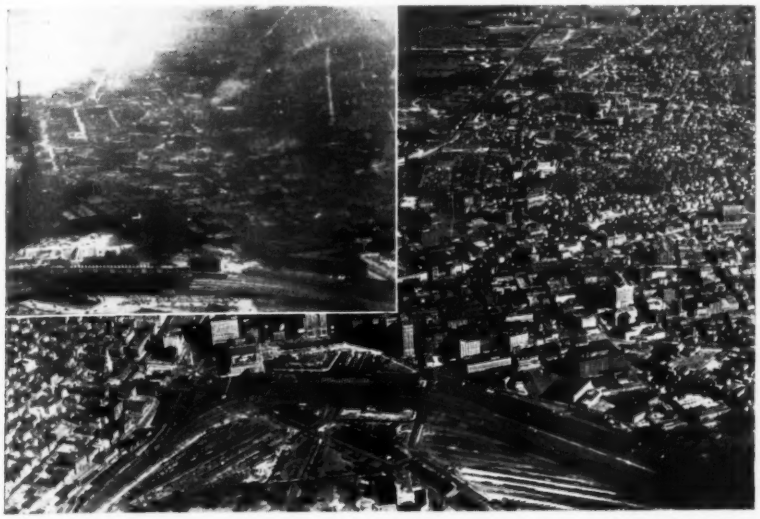
How modern mechanized tax accounting and billing systems become obsolete with the passing of a few years was pointed out by E. H. Dieruf, Director of Finance, Louisville. In 1935 Louisville installed a modern system by which the tax bills were printed by Addressograph machines and I.B.M. electric accounting machines. These two types of equipment were synchronized. The property name and location and description were printed from Addressograph plates, and the tax data were furnished by the I. B. M. machines, printing bills in triplicate. Even with this system additional clerks had to be hired in the tax period. There was also delay at the cashier's windows. The taxpayer presented his notice to the clerk, who had to obtain the original bill and figure discount. This was checked by another clerk and recorded by a third clerk, requiring one-half to one hour to pay a single bill. Taxpayers who mailed their bills frequently figured the 3% discount incorrectly.

A simpler method was desired. The addressing machines have been eliminated, and the complete bills are produced from I.B.M. punched cards. An average of 2½ cards are required per name. The new bills are produced in duplicate with stub. The original bill is mailed to the taxpayer. The stub is retained by the cashier. They are produced in continuous form. A ledger for the permanent records for the tax receiver is run off on the I.B.M. machines. Mr. Dieruf asserted that the work is considerably expedited, and the bills themselves cost $500 less.

Rochester, N. Y., has had mechanized accounting not only for tax work, but for water billing, payrolls, and other operations for many years. Current improvements, outlined by City Comptroller Raymond W. Whitley in the May issue of THE AMERICAN CITY, were effectively presented as a motion picture at the Municipal Finance Officers Association Conference. This picture first displayed the former system, showing both the mechanized procedures and the various manual operations. The second part called particular attention to these manual operations and how they might be radically reduced. The third part showed the new system with the omissions of many of the manual operations. The principal departure is in eliminating single or separate bills and checks in favor of production by continuous forms at the rate of 10,000 per hour. Three bills are now handled where only two could be handled with the former system.

Providence Clears the Air

The new smoke control ordinance is based on sound engineering studies.



COURTESY AVERY LORD

The soft haze hovering over Providence in the inset is not fog, but dense obscuring smoke. At the right, same city after effective legislation.

INDUSTRIES or individuals in Providence,, R. I., can no longer hide behind the screen of "war necessity" to excuse sloppy housekeeping. No longer can chimneys belch out soot-laden clouds of smoke, nor the owners defy critics with that pseudo-patriotic bromide, "there's a war on."

Naturally, there was some justification for the relaxation of controls during the war. Many industries had to convert their heating plants from oil to soft coal and were consequently unable to utilize their boilers at their design efficiency. Combustion simply wasn't thorough and not a great deal could be done about it then.

The Medical Society, however, recognized that a potential health hazard existed and recommended certain changes. In the summer of 1945, the Chamber of Commerce became interested in the recommendations of the medical society and authorized John E. Vance, Director of Civic Planning, to visit Cincinnati, Pittsburgh, and Washington to analyze administration of the smoke control problem in those cities. Director Vance reported his findings to the Medical Society, which in turn urged the Mayor to appoint a committee on air pollution.

This committee produced results. It first secured enabling legislation in the Rhode Island General Assembly that made it possible for the city council to pass a model air pollution ordinance. It next prepared the ordinance, basing it on information that Mr. Vance had gathered, coupled with the best engineering advice that the committee could obtain.

The ordinance, in essence, took these fundamental steps:

- Called for an annual inspection of all fuel-burning equipment in the city.
- Provided that the emission of smoke with a density equal to #2 of the Ringelmann chart for more than a few minutes in an hour, is a violation.
- Established a similar regulation covering smoke from railroads.
- Provided for the control of fly ash and dust.
- Established control of fumes from gases and other offensive odors.
- Established a system of certification for fuel dealers to show the name of the person making the sale of coal and stating whether the fuel delivered has a high or low volatile content.
- Called for reports on the sale or lease of fuel-burning equipment, the report to be made to the air pollution engineer within ten days after such sale or lease.
- Set up a set of fees for installation permits, operating permits, and for the certificates of operation. The fees help to defray the operation cost of the new division.

The ordinance corrected many faults in the old law. Actually the previous regulation was not an ordinance but a state law which tolerated the emission of smoke equal to #3 of the Ringelmann chart. It further did not provide for the control of fly ash or other dust particles. Thus, even though the city officials were aware of the air pollution from the chimneys, they actually were helpless to do anything constructive about it.

In studying how the measure could be enforced, Director Vance picked up many practical pointers from Cincinnati, Washington, and Pittsburgh officials. Compliance, he discovered, is not so much enforcement as it is education. Cincinnati conducts an annual educational program to help the average householder handle the smoke nuisance. Pittsburgh approaches the householder only if his heater becomes a community menace. In both cities the householder pays a small fee to have his heating unit installed properly so that it will burn fuel efficiently. Generally, cooperation is good, because compliance means a lower fuel bill.

Director Vance found two effective methods for controlling unnecessary smoke from railroad locomotives. One calls for air steam jets that direct air over the firebed when the train is standing still or moving slowly, thus bringing an adequate amount of air to support combustion. The other method is to require the firemen to open the fire doors when engines are standing still or proceeding slowly.

Fly Ash Removed

The officials of all three cities that Mr. Vance visited concurred that the best way to remove fly-ash is to install an electrical precipitator. This device charges the particles so that they are attracted to a screen with an opposite charge and thus are removed entirely from the smoke. However, this device is expensive and economically beyond the reach of most industries. As an alternative, a cyclone separator is widely used both in Pittsburgh and Cincinnati.

The cost of operating such a service amounted to $17,000 per year in Pittsburgh and $30,000 in Cincinnati. Pittsburgh employs six regular inspectors and needs between ten and fifteen. Cin-

cinnati employs five and needs more. Washington has three and should have five, Mr. Vance learned.

What has this smoke control work meant to Providence? Tests during ten months in 1946 showed a drop of more than 100%, or 229 tons per square mile, in contrast to the 679 tons existing previously. Some of these changes can be reflected in the conversion from emergency wartime fuels to oil in local industries. They also can be accounted for by the cooperation of industries following conferences with public service engineers in renewing boilers and improving firing techniques. Greater results will be expected when Public Service Engineer Philip S. Muncini is able to take full advantage of the new ordinance. As an example, he mentions a large rooming house in a residential area which was a source of frequent complaints last year. This rooming house burned soft coal and burned it improperly, but no amound of pleading on Mr. Muncini's part could effect a change. Now, however, the new ordinance has prompted this rooming-house to convert from coal to oil and thus eliminate the difficulty.

New York City's Sewage Treatment Plants

MAIN STRUCTURES AND EQUIPMENT

	Wards Island Activated Sludge 220 MGD	Tallmans Island Activated Sludge 20 MGD	Bowery Bay Activated Sludge 38 MGD	Jamaica Modified Aeration 35 MGD	Coney Island Chemical Precipitation 54 MGD	26th Ward Preliminary Sedimentation 38 MGD	City-Harts Island Plain Sedimentation 0.8 MGD
Primary Settling Tanks	8 square tanks 99′ x 99′ x 15′ 1,224,000 cu. ft. The Dorr Co., Inc.	3 rectangular tanks 124′ x 50′ x 12′ 220,000 cu. ft. Link-Belt Co.	3 rectangular tanks 124′ x 50′ x 12′ 220,000 cu. ft. Jeffrey Mfg. Co.	None (2 Riensch-Wurl screens—20′ 5/32″ x 2″ slots)	4 circular tanks 90′ x 14′ 4 rectangular tanks 250′ x 38′ x 11¾′ 824,000 cu. ft. The Dorr Co., Inc.	4 rectangular tanks 102′ x 67′ x 12′ 504,000 cu. ft. Link Belt Co.	2 rectangular tanks 75′ x 14′ x 8′ 16,400 cu. ft. Chain Belt Co.
Aeration Tanks	16 tanks, 4 passes 345′ x 22′3″ x 15′ 7,000,000 cu. ft.	2 tanks, 4 passes 373′ x 22′3″ x 15′ 936,000 cu. ft.	2 tanks, 4 passes 275′ x 22′3″ x 15′ 671,000 cu. ft.	2 tanks, 4 passes 320′ x 30′ x 15′ 1,100,000 cu. ft.	None	2 tanks, 4 passes 404′ x 30′ x 15′ 1,380,000 cu. ft.[2]	None
Final Settling Tanks	32 rect. tanks 179′ x 42′6″ x 12′9″ 3,072,000 cu. ft. Link Belt Co.	4 rectangular tanks 134′ x 93′9½″ x 12′ 580,000 cu. ft. Link Belt Co.	6 rectangular tanks 94′6″ x 71′5″ x 12′3″ 486,000 cu. ft. Jeffrey Mfg. Co.	8 circular tanks 120′ x 12′ 1,090,000 cu. ft. The Dorr Co., Inc.	None	8 rectangular tanks 110′10″ x 70′ x 12′6″ 750,200 cu. ft. Link Belt Co.[2]	None
Main Sewage Pumps	6 pumps 90 MGD 540 MGD Worthington Pump & Machinery Corp. General Elec. Co.	4 pumps 2-35 MGD 2-15 MGD 100 MGD Worthington Pump & Machinery Corp.	4 pumps 2-42 MGD 2-21 MGD 126 MGD De Laval Steam Turbine Co. Burke Elec. Co.	6 pumps *1-40 MGD ‡3-45 MGD ‡2-20 MGD 215 MGD *Worthington-Crocker Wheeler Elec. Mfg. Co. ‡Tamp Shipbuilding & Eng. Co. Westinghouse Elec. Mfg. Co.	4 pumps 42 MGD 168 MGD Worthington Pump & Mfg. Co. Westinghouse Elec. & Mfg. Co.	4 pumps *3-20 MGD ‡1-40 MGD 100 MGD *American Well Works General Elec. Co. ‡Worthington Pump & Mach. Corp. Electric Machinery Mfg. Co.	6 pumps 1-4.6 MGD (C.I.) 2-2.1 MGD (C.I.) 2-1.0 MGD (H.I.) 1-0.5 MGD (H.I.) 11.3 MGD Economy Pumps, Inc. Electric Boat Co.
Main Blowers	6 blowers 2-28,500 cfm 4-42,500 cfm 227,000 cfm Ingersoll-Rand Co. Elliott Co.	4 blowers 2-10,000 cfm 2-20,000 cfm 60,000 cfm Roots Connersville Blower Corp. Worthington Pump & Mach. Co.	4 blowers 4-10,000 cfm 40,000 cfm De Laval Steam Turbine Co. Elliott Co.	3 blowers 3-15,000 cfm 45,000 cfm Roots Connersville Blower Corp. General Elec. Co.	None	To be installed	None
Return Sludge Pumps	8 pumps 15 MGD each 120 MGD Worthington Pump & Mach. Corp. General Elec. Co.	4 air lifts 16″	3 pumps 10 MGD 30 MGD Morris Mach. Wks. Burke Elec. Co.	16 air lifts 12″	None	To be installed	None
Digestion Tanks	None	4 tanks— floating covers 83′ x 30′ 705,000 cu. ft. Pacific Flush-Tank Co.	4 tanks— gasometer covers 81′ x 32′ 728,000 cu. ft.	12 tanks— gasometer covers 81′ x 28′6″ 1,627,000 cu. ft.	8 tanks— gasometer covers 54′x24′6″ *6 tanks— floating covers 70′ x 31′6″ 1,277,000 cu. ft. *Pacific Flush-Tank Co.	6 tanks— no covers 86′ x 26′6″ 1,170,000 cu. ft.	2 tanks— gasometer covers 26′ x 18′ 20,600 cu. ft.
Gas Engines and Generators	None	2 engines—350 HP 2 " —150 HP 2 " —800 HP 2 " —450 HP 3,500 HP Worthington Pump & Mach. Corp.	2 engines and generators 800 HP 700 KVA 1,600 HP 1,400 KVA Rathbun-Jones Eng. Co. Electric Machinery Mfg. Co.	3 engines and generators 1,440 HP 1,250 KVA 4,320 HP 3,750 KVA Worthington Pump & Mach. Corp. General Elec. Co.	3 engines and generators 900 HP 750 KVA 3 engines and generators 300 HP[1] 250 KVA 3,600 HP 3,000 KVA Worthington Pump & Mach. Corp. Crocker Wheeler Elec. Mfg. Co.	To be installed	None

[1] 1936 installation. Not in use now. [2] Incomplete.

This compilation of data was prepared by N. I. Kass, Chief of New York City's Bureau of Sewage Disposal Operations. Mr. Kass' articles on the New York City treatment plant appeared in the June and July issues of *The American City*.

The City Tells Its Story—VI

What is your municipal public relations potential?

Autumn calls for a checkup after summer's relaxing perspective

By HENRY DAVIS NADIG
Director of Public Relations
Regional Plan Association
New York, N. Y.

AFTER the summer slow-down and the dog-day doldrums you invariably find yourself pulling together the loose ends of the leisurely thinking you may have been doing in the hot weather season.

Usually you have just about given thanks for the passing of the perspiration-producing heat wave and are grateful for this heavenly hiatus during which you can quietly collect your thoughts, when—up sneaks September and tips a pail over your head. You are suddenly dripping again—with municipal problems!

Before September sets in too far, before the problems become too perplexing and the upcoming issues are joined, you may want to do some figuring on how you can make public relations do a real job for you and your municipality during these next several months.

First Stage

You have reached the first MPRtful stage if you take time to ask yourself on behalf of your municipality or your department: What is my MPR potential? What power, resources, desire have I to use public relations wisely to help my city or my department? What am I going to do about it?

Your summer may have brought you in personal contact with other officials who have taken up MPR and made it practical and powerful in one or more phases of municipal action. An exchange of ideas can provide added impetus for applying the tools of MPR to your own problems of thoroughly informing, interpreting and clarifying official work.

At the Conference of the Canadian Federation of Mayors and Municipalities, for example, the municipal heads seemed keenly interested in learning what fellow mayors were doing in public relations. They were also highly interested in the type of MPR activities carried out and the kind of publications produced in the United States. This may well be reflected in more requests from them to U. S. mayors for printed matter.

An MPR Potential Realized

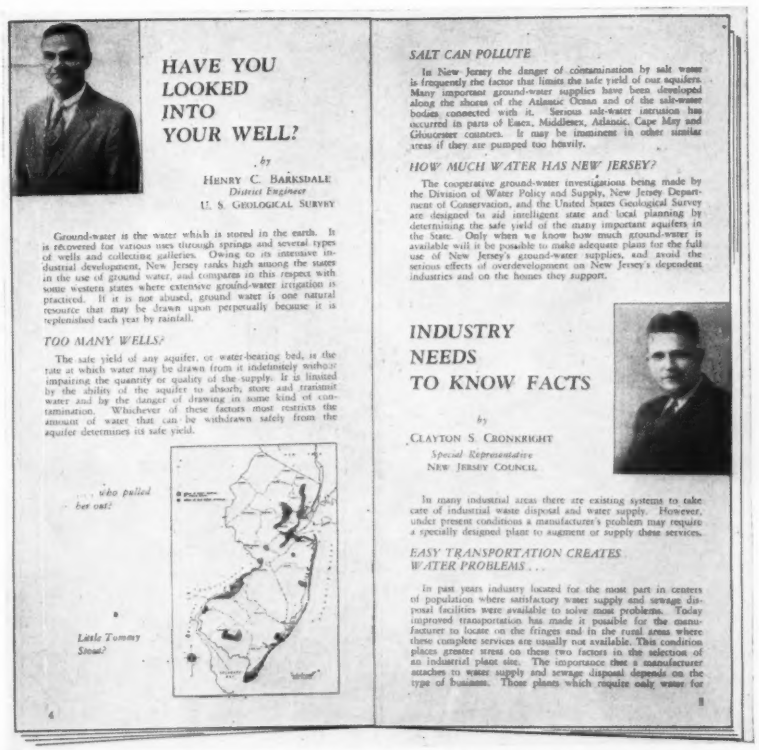
A definite summer-contact gain has been registered by Mayor George W. Johnson of Duluth, Minnesota, who was at the Conference. He recognized a phase of his MPR potential and promptly capitalized on it.

Mayor Johnson writes:

"Since returning from Winnipeg and listening to your talk and also that of the Mayor of Toronto, I have interested one of our radio stations to give me time on the air twice a month without charge for a similar program!"

Mayor Earl Riley of Portland, Ore., who also attended the Canadian Conference, said he would send along some details on MPR in his city. You'll be interested in the following excerpts from his letter:

"Our press and radio coverage can be rated as very good, I believe. The two leading Portland papers maintain full-time reporters in the City Hall and give adequate space to city activities. In addition, the local radio stations offer weekly, as a public service, programs dealing with municipal affairs. I appear regularly once a week on a fifteen-minute program, 'About Our Town,' on which I discuss various municipal problems and possible solutions. (Wednesday, 10:30 p.m.). The Portland Traffic Safety Commission sponsors other regular fifteen-minute programs. Among these is 'Danger Ahead,' which is characterized by interviews with police officers, traffic judges, school and municipal officials, and civic leaders (Saturday, 5:30 p.m.). 'Hey, Mr. Motorist' is an ad-lib curb-side interview broadcast (Friday, 10:15 p.m.). 'For



HAVE YOU LOOKED INTO YOUR WELL?

by HENRY C. BARKSDALE
District Engineer
U. S. GEOLOGICAL SURVEY

Ground-water is the water which is stored in the earth. It is recovered for various uses through springs and several types of wells and collecting galleries. Owing to its intensive industrial development, New Jersey ranks high among the states in the use of ground water, and compares in this respect with some western states where extensive ground-water irrigation is practiced. If it is not abused, ground water is one natural resource that may be drawn upon perpetually because it is replenished each year by rainfall.

TOO MANY WELLS?

The safe yield of any aquifer, or water-bearing bed, is the rate at which water may be drawn from it indefinitely without impairing the quantity or quality of the supply. It is limited by the ability of the aquifer to absorb, store and transmit water and by the danger of drawing in some kind of contamination. Whichever of these factors most restricts the amount of water that can be withdrawn safely from the aquifer determines its safe yield.

... who pulled her out!

Little Tommy Stout?

SALT CAN POLLUTE

In New Jersey the danger of contamination by salt water is frequently the factor that limits the safe yield of our aquifers. Many important ground-water supplies have been developed along the shores of the Atlantic Ocean and of the salt-water bodies connected with it. Serious salt-water intrusion has occurred in parts of Essex, Middlesex, Atlantic, Cape May and Gloucester counties. It may be imminent in other similar areas if they are pumped too heavily.

HOW MUCH WATER HAS NEW JERSEY?

The cooperative ground-water investigations being made by the Division of Water Policy and Supply, New Jersey Department of Conservation, and the United States Geological Survey are designed to aid intelligent state and local planning by determining the safe yield of the many important aquifers in the State. Only when we know how much ground-water is available will it be possible to make adequate plans for the full use of New Jersey's ground-water supplies, and avoid the serious effects of overdevelopment on New Jersey's dependent industries and on the homes they support.

INDUSTRY NEEDS TO KNOW FACTS

by CLAYTON S. CRONKRIGHT
Special Representative
NEW JERSEY COUNCIL

In many industrial areas there are existing systems to take care of industrial waste disposal and water supply. However, under present conditions a manufacturer's problem may require a specially designed plant to augment or supply these services.

EASY TRANSPORTATION CREATES WATER PROBLEMS . . .

In past years industry located for the most part in centers of population where satisfactory water supply and sewage disposal facilities were available to solve most problems. Today improved transportation has made it possible for the manufacturer to locate on the fringes and in the rural areas where these complete services are usually not available. This condition places greater stress on these two factors in the selection of an industrial plant site. The importance that a manufacturer attaches to water supply and sewage disposal depends on the type of business. Those plants which require only water for

Pages from the July issue of *Jersey Plans*, published by the New Jersey Bureau of Planning, show how busy and readable a small booklet can be made.

Home and School' is another interview program with the emphasis on safety matters (Thursday, 3:00 p.m.).

"The commissioners and I frequently appear on other radio programs which are not regularly scheduled as are the above."

Mayor Riley writes that "there has been some consideration of developing a municipal public relations department in Portland," saying it is still in the talk stage.

He adds :

"We are, of course, aware that the city employes in their daily contacts with the public are our greatest public relations factor. Occasionally we give this particular emphasis, as was done during March and April of this year through a series of weekly one-hour lectures on "Public Relations and the Public Employe" for which officials from private and federal agencies were the principal speakers. Through such special series, such mediums as our police training school, and in our day to day work, we try to keep all city employes aware of the importance of public relations."

A Word on Jessica Allan

Some column in the future may be devoted to the handling of public relations and particularly the press, at municipal conferences. But I don't want to pass up this oppportunity, as long as I've been referring to the Conference, to give a word of praise to Miss Jessica Allan, Executive Secretary of the Canadian Federation of Mayors and Municipalities, for her energy and ingenuity at the Winnipeg meeting. She kept things rolling and by her activity offered an excellent example of good public relations.

Jersey Planning

In New Jersey, some months ago, came a realization of MPR potential in the state planning department followed by effective action.

Out of the Bureau of Planning of the New Jersey Department of Economic Development has been coming a small, ably edited and simply produced publication titled "Jersey Plans." A 4-by-10 booklet usually of 16 pages and cover, the publication comes out bi-monthly and is packed with planning information of a national, state and local level, aimed to keep Jerseyites up-to-date on what is happening in the field of planning.

The policy of "Jersey Plans" has been to lead off with treatment of a special subject at the hands of several contributors and to follow up these pages with short accounts of planning news. This editorial treatment provides an opportunity for recognized authorities and technicians in specific fields (for example, water, in the July issue) to express themselves on problems of local and state significance and at the same times does not neglect planning and development progress as it proceeds in the state.

Despite the small size of the magazine, the editors of "Jersey Plans" have already achieved a uniqueness and distinction of style in their publication. Type is very readable. Headings are frequent and pithy. Illustrations are used where they can really do a job.

Planning will be helped in New Jersey by this sound use of an important public relations tool. The editors of "Jersey Plans" are to be complimented on the job they are doing.

Honest Talk

Please get a load of some honest, straight-from-the-shoulder talk about the press and public relations—as an antidote to what you may have heard from or read by some newspapermen and others in the past.

It is good for summer's-end thinking and may set you straight (should that be necessary!) or help you clarify MPR for somebody else.

This honest talk comes from City Editor James R. Sutphen of the *Bergen Evening Record*, Hackensack, N. J., and is contained in a short article he wrote for Robert H. Gamble and Associates, Hackensack public relations firm. Here are a few excerpts that will give some inkling of the truths Sutphen propounds. But you ought to have the little folder yourself—if you can still get a copy.

Sutphen states:

"While the two subjects are closely integrated, press relations is only one phase of public relations. A press relations man can be successful with no knowledge of public relations, but a public relations man is sure to be a failure unless he is first a good press relations man."

Sutphen states:

"Contrary to some popular belief, newspapermen welcome the assistance of the public relations man because he can save newspapers time and space.

"He enables newspapers to cover more ground and to cover important sources of news more thoroughly. He teaches business and industry to be ready with newsworthy comment on any issue with which they are properly concerned. A good public relations man is well versed in newspaper practices, policies and ethics. Above all, he knows news when he sees it and he knows how to write

This wheel concept of the content and organization of the Comprehensive City Plan is widely used to symbolize the dynamic planning program under way in Chicago. MPR observers will want to watch the methods used by the City Plan Commission's public relations department to interpret and popularize the Plan.

a news story. That in itself is a big lift to a newspaper."

We are prone to blame newspapers all too often for an incomplete story, a one-sided story or a story that seems biased. Sutphen's admonition, "Don't blame the newspapers," is clearly backed up by a citation of what often happens in labor disputes: management's side can't be obtained.

Give Press All

The point for us in MPR is that you, as a municipal official, ought to be very sure you give the press all possible details so that the public will be in the know. Do you realize what a whale of an MPR potential you have for this—and what good to your office and your community can result from good use of this potential?

Schools Stressed in Chicago

A visit to the City Plan Commission office in Chicago brought me in closer touch with how their public relations operations are proceeding. Schools are getting special attention. A series of talks, copiously illustrated with slides, is being prepared for presentation at the eighth-grade level this current school year. The pictures will change so fast on the screen and the talks will be so well integrated that a program will be the next best thing to sound movies.

Leonard Smith, the Commission's able public relations director, aims to show these programs to all eighth-graders, interest them in the planning and development of Chicago, and equip them with a sound concept of the nature, purpose, and importance of their neighborhood and city-wide development. It will not be the fault of Mr. Smith and his staff if Chicago men and women of the future don't know their city.

The Chicago Plan Commission is moving forward with application of the neighborhood principle to the replanning and development of the city under the over-all comprehensive city plan. This principle is receiving popular portrayal through publications and talks.

New Courses in Planning Offered by Several Universities

REVISED and expanded programs and courses in planning offered by universities throughout the country reflect the increased importance attached to training in urban development, housing, and public administration. Equally noteworthy is the emphasis in some of the new programs on the fact that the teaching of planning cuts across a number of academic disciplines, and that, for effective, integrated instruction, the cooperation of many university departments is required.

Columbia University

Four new courses in planning are being offered at Columbia University this year as the forerunner to a comprehensive university-wide teaching and research program in urban and regional planning which is now being formulated. Three of these new courses will be given in the evening, and will be offered in the Planning and Housing Division, School of Architecture, and through the School of General Studies. The fourth will be a late afternoon course offered through the Department of Public Law and Government.

Hugh R. Pomeroy, Director of Planning, Westchester County, will give one lecture course, entitled "Planning and Housing Legislation and Administration." Mr. Pomeroy will also act as permanent chairman and discussion leader for a "Planning and Housing Round Table" during the spring season, to which outstanding authorities will be invited to discuss current issues and problems in the housing, planning, and urban development fields.

A third course, to carry through the entire school year, is a "Seminar in Urban Planning Research." This seminar will be directed by Frederick P. Clark, Planning Director of the Regional Plan Association, New York. The fourth course, "Urban Planning," will be a survey of major problems confronting urban administration today—especially urban expenditures, land-use, housing, health, and welfare activities. This late afternoon course will be given by John B. Millett, Associate Professor of Public Administration.

University of North Carolina

The degree of Master of Regional Planning is now offered in the recently established Graduate School Department of City and Regional Planning of the University of North Carolina. As the result of a number of joint conferences among representatives of the University, the Tennessee Valley Authority, and state and local planning agencies in the area, the department was established to provide a center of education and research in city and regional planning in the southeast. The program is directed toward developing a broad background of social, economic, and political knowledge in the training of the planner, in addition to the design disciplines and techniques employed by him. Consequently, the course work covers many departmental fields.

Rutgers University

An undergraduate curriculum in planning leading to the degree of Bachelor of Science in city and regional planning is available at the College of Engineering at Rutgers University, New Brunswick, N. J.

The four-year program of study consists of a score of courses in planning techniques and design, supplemented by courses in history, economics, and political and social science which are essential to the work of the planner. Practical experience for the students is available through work with the Middlesex County Planning Board in New Jersey.

New Chicago Program

Another new and developing planning curriculum is that of the University of Chicago, for which Rexford Guy Tugwell is directing the program of education and research in planning with a number of cooperating departments. No degrees are offered, and the emphasis will be on planning theory. New additions to the staff are Melville Branch, Jr., William Ludlow and Prof. Harvey Perloff. Prof. Herman Finer will teach a course in the winter on comparative planning methods, based on a current trip he is making through European countries. Walter H. Blucher, Executive Director, American Society of Planning Officials, will continue to lecture on developments in the planning field.

London

Another opportunity for education in planning is that offered by an overseas correspondence course of the School of Planning and Research for Regional Development, 34-35 Gordon Square, London, W.C. 1, England. The course stresses the physical aspects of planning and is designed to take about one year to complete. Applications, giving particulars of qualifications, should be sent to the secretary of the school.

M.I.T. Planning Conference

The Fall Conference in City and Regional Planning, sponsored jointly by the School of Architecture and Planning, Massachusetts Institute of Technology, and the American Society of Planning Officials, meets the need for an intensive course covering both the administrative and technical sides of city and regional planning. Scheduled for the two weeks beginning September 15 at M.I.T., the course is open to men and women who have had practical experience in planning or in a related professional field. Seminars on the "Principles and Techniques of Planning" and "Planning Legislation and Administration" are conducted by Prof. F. J. Adams and Flavel Shurtleff.

Legal Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS
Charles S. Rhyne, General Counsel

Rent Control and Cities

ALTHOUGH the first session of the 80th Congress enacted rent control legislation which will extend into 1948, many cities have become interested in the steps which they may legally take to insure continuation of controls over rental of those accommodations which are exempted from the Act that was passed by Congress. In general, these exemptions include certain hotel accommodations, motor courts, tourist homes, new construction completed after February 1, 1947, and properties which were vacant from February 1, 1945, to January 31, 1947. Many cities enacted rent control ordinances during the 25 day period in 1946 when there was no federal legislation, and many are considering their adoption at the present time. Several cities have adopted such ordinances in 1947.

The legal authority of cities to adopt such measures is a matter of concern to every municipal attorney. Examination of the court decisions on the subject will be useful in determining the extent of this authority. These decisions logically arrange themselves into two groups. The first of these are the decisions in the World War I period while the second are those during the World War II period.

Decisions in World War I Period

In the District of Columbia in 1919, the so-called Ball Act was passed, under which tenants were allowed to hold over at the end of their lease term at the rent provided in the lease and the landlord had a right to petition a rent commission set up under the Act for any increase in rent the landlord felt to be reasonable. The rent commission had power to fix fair and reasonable rents upon complaint of either landlord or tenants. The Supreme Court of the United States in the case of *Block* v. *Hirsh*, 256 U. S. 135, 44 Sup. Ct. 458, 63 L. ed. 865, 16 A.L.R. 165 (Apr. 18, 1921) held this Act constitutional on the ground that it was a police power measure to take care of an emergency and well within the powers of Congress with respect to the District of Columbia. In 1924, the Court in *Chaselton Corp.* v. *Sinclair*, 264 U. S. 543, 44 Sup. Ct. 405, 68 L. ed. 84 (Apr. 21, 1924) stated that if the emergency had passed the Act was at an end, as the only justification for it was the emergency. In *Peck* v. *Fink*, 55 App. D. C. 110, 2 F. (2d) 912 (Nov. 3, 1924), *cert. den.* 266 U. S. 631 (1925), the Court held that since the emergency was over the regulation under the Act was at an end. In *Karrick* v. *Cantrill*, 51 App. D. C. 176, 277 Fed. 578 (1922); *Karrick* v. *Coleman*, 51 App. D. C. 183, 277 Fed 585 (1922); and *Kennedy Bros.* v. *Sinclair*, 52 App. D. C. 398, 287 Fed. 972 (1923), the District Court of Appeals considered the question of what was a fair and reasonable rent under the Act.

New York State Decisions

Just following the World War in 1920, New York State had a real emergency created by the influx of people into New York City and other large cities. The New York legislature passed an Act similar in principle to that considered in *Block* v. *Hirsh*, *supra*, and the Supreme Court of the United States sustained this Act in *Marcus Brown Holding Company* v. *Feldman*, 256 U. S. 170, 41 Sup. Ct. 46, 65 L. ed. 877 (Apr. 18, 1921), the Court following the decision of the Court of Appeals of New York State in *People ex rel. Durham Realty Corp.* v. *La Fetra*, 230 N. Y. 429, 130 N. E. 601, 16 A.L.R. 152 (Mar. 8, 1921), app. dis'm 257 U. S 665, 42 Sup. Ct. 47, 66 L. ed. 424 (Feb. 27, 1922), and the memorandum decisions based upon the *La Fetra* opinion and handed down on the same date by the New York Court of Appeals. In the *Feldman* case the Court also sustained the statutory provision requiring landlords to render the usual services rendered to tenants. It seems that where rents were fixed which the landlords did not like the landlords cut off janitor and other services. In *Edgar A. Levy Leasing Co.* v. *Siegel*, 258 U. S. 242, 42 Sup. Ct. 289, 66 L. ed. 595 (Mar. 22, 1922), the Court held that a standard which provided that it was a defense to an action for rent that the rent agreed upon is unjust, unreasonable, and oppressive is a sufficient standard to satisfy the due process clause of the Constitution. The cases of *A. C. & A. M. Hall Realty Co.* v. *Moos*, 200 App. Div. 66, 192 N. Y. S. 530 (1922); *Hirsh* v. *Weiner*, 116 Misc. 312, 190. N. Y. S. 111 (1921); *Jash-Sap Realty Co.* v. *Fishman*, 115 Misc. 485, 190 N. Y. S. 117 (1921), interpreted the term reasonable rent. In *Rogan* v. *Weiss*, 115 Misc. 193, 187 N. Y. S. 443 (1921), the Court held that the ordinary landlord and tenant act remedies had been suspended by the new rent control measures. In *Blauweis* v. *Kirshner*, 128 Misc. 630, 219 N. Y. S. 662 (1927), the Court held that the emergency rent legislation was still in effect as late as 1927.

The New York State legislature allowed the rent control legislation to expire and New York City attempted to reenact all of such legislation as a local law. The Court in *Gennis* v. *Milano*, 135 Misc. 209, 237 N. Y. S. 432 (1929), held that New York City could not suspend contract rights and statutory remedies and procedure provided by the legislature for the entire state, and that the law went beyond matters relating to the property, affairs, and government of New York City and was invalid.

Wisconsin, New Jersey, Texas

In *State ex rel. Milwaukee Sales and Inv. Co.* v. *Railroad Commission*, 174 Wis. 458, 183 N. W. 687 (1921), the Court invalidated the Wisconsin rent control law of 1920 on the ground that since it applied only to Milwaukee County rather than all counties of the state, in which an emergency existed also, the legislation was invalid as it denied equal protection of the laws to landlords in Milwaukee County. In *State ex rel. Jackson* v. *Reid*, 174 Wis. 536, 183 N. Y. 992 (1921), a judgment of contempt under the Wisconsin rent control law was reversed on the ground that the law was unconstitutional.

In New Jersey, the first emergency rent control law was held invalid on a technical draftsmanship point in *Zweig* v. *Tiffany*, 95 N. J. L. 45, 111 Atl. 263 (1920), but that Act was later redrafted and enforced In the case of *Jersey City Land and Improvements Co.* v. *Mayor of Jersey City*, 111 Atl. 275 (N. J. 1920), the Court set aside a conviction under an ordinance requiring a minimum temperature of 68° F. in rented dwellings on the ground that it was not proved that the temperature was below 50° outside the particular dwelling involved and such proof was, under the ordinance, a condition precedent to such conviction. In *Stell* v. *Jersey City*, 95 N. J. L. 38, 111 Atl. 274 (1920), it was held that the city commissioners could not advance city money to defend dispossess proceeding brought by landlords, nor could the city force landlords to file with its clerk a copy of all notices of increases in rents or notices to quit. The notices of increases in rent and notices to quit had been required on the ground that the city clerk needed that information in order to divide the city into election districts, and the court points out that he already had sufficient information to perform that task.

In three Texas cases farm rent control acts were invalidated on the ground that there was no emergency to justify such legislation, *Rumbo* v. *Winterround*, 228 S. W. 258 (Ct. Civ. App. Tex. 1921); *Miller* v. *Branch*, 233 S. W. 1032 (Ct. Civ. App. Tex. 1921); and *Culberson* v. *Ashford*, 18 S. W. (2d) 585 (Texas, 1929).

In World War II rent control has been almost exclusively a federal function, Honolulu, Hawaii; Flint, Mich.; Fresno, Calif.;

(*Continued on Page* 131)

Recent City Manager Appointments

Appointment of these city managers has been reported in recent issues of *The American City*. For latest appointments, see page 131 of this issue.

Edward W. Larsen
Ludington, Mich.

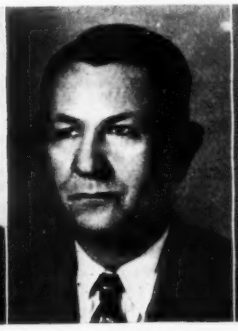
George C. Shannon
Oxnard, Calif.

Keith R. Chinn
West Palm Beach, Fla.

Lyle C. Towne
Monson, Me.

R. W. Laing
Alliance, Nebr.

J. Walter Hopton
Neosho, Mo.



J. B. Tackett
Sulphur Spings, Texas

Walter F. Johns
Emporia, Kans.

Phineas F. Ellis
Castle Hill, Me.

E. C. Mariner, Jr.
Guilford, Me.

Charles Brazil
Taylor, Texas

Paul H. Hermann
Bethel, Vt.

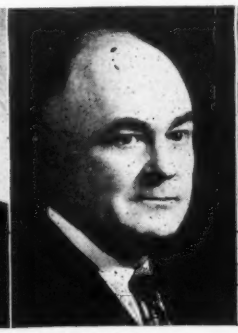
R. M. Dorton
Santa Monica, Calif.

N. Y. Damoose
Ypsilanti, Mich.

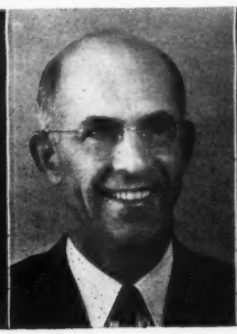
Victor C. Hobday
Paducah, Ky.

M. Maxwell
University City, Mo.

C. H. Helm
New Bern, N. C.



Roy L. Williamson
Rocky Mount, N. C.



Bill N. Taylor
Pelly, Texas

H. H. Allen
Corpus Christi, Texas

Zoning and Planning Notes

Edited by NORMAN WILLIAMS, JR.
With the assistance of Frank B. Williams and Edward M. Bassett

Public Housing in New Hampshire

NEW HAMPSHIRE. *In re Opinion of the Justices*, 53 Atlantic (2d) 194 (New Hampshire Supreme Court, May 14, 1947).

In this advisory opinion the constitutionality of a proposed new law, providing the first state aid for low-rent housing in New Hampshire, was upheld. In deciding that low-rent housing was a public rather than a private purpose, the Court rested its opinion largely on legislative declarations citing the housing shortage, the resulting disruption of families and morals, and the needs of a large number of veterans and workers. However, the Court also stated that, while the question if new would be open to serious doubts, the issue was really foreclosed by the huge volume of precedent upholding expenditures for public housing.

Municipal Hotel Forbidden

NORTH CAROLINA. *Nash* v. *Town of Tarboro*, 42 South Eastern (2d) 209 (North Carolina Supreme Court, April 9, 1947).

In accordance with statutory authorization, the town here proceeded to make financial preparations for building a municipal hotel, since the only existing one in town was deemed inadequate. In the opinion, however, the Court reviewed a series of decisions stating that a hotel was really a private business, and therefore decided that the expenditure could not be justified under the public purpose doctrine.

State Aid to Local Airports

WEST VIRGINIA. *State* ex rel. *Board of Aeronautics* v. *Sims*, 41 South Eastern (2d) 506 (West Virginia Supreme Court of Appeals, February 11, 1947).

Airports in West Virginia have been built and operated by local governments pursuant to statutory authorization passed in 1929, and since 1935 the Legislature has authorized and appropriated State funds to further this program. When the Board of Aeronautics sought to distribute moneys appropriated for this purpose in 1945, the State Auditor refused to honor the requisition and claimed that State financial aid to such facilities was unconstitutional, because it constituted an extension of state credit and an assumption of the debts of the local authority. The Board brought a mandamus action to free the funds.

In the opinion, the promotion of airports was admitted to be a public purpose and therefore a proper subject of expenditure of State funds. Moreover, the Court upheld the extension of State funds through local agencies to help the program, and distinguished this from the assumption of local debts. The system of decentralized local control and operation, calling on State aid for funds, was so obviously sensible here—as in many other fields, such as relief—that the Court frankly recognized the practical necessities of the situation and the absurdity of duplicating facilities.

Residences, Size and Appearance—Zoning

FLORIDA. *City of West Palm Beach* v. *State* ex rel. *Duffy*, 30 Southern (2d) 491 (Florida Supreme Court, May 6, 1947).

A zoning ordinance here provided that any proposed new building must be substantially equal to the adjacent buildings (within the same subdivision) in appearance, area and height. In this case, the proposed building was to have five small rooms, while the neighboring buildings ranged from seven to nine rooms, and the proposed building was apparently rather different in appearance from those nearby. In the opinion the Court held that the requirements in the ordinance were so vague that decision was left to administrative caprice, and that the requirements bore no relation to any lawful purpose under the police power. The ordinance was therefore held void.

Liquor License Limitations

FLORIDA. *Chaikin* v. *City of Miami*, 30 Southern (2d) 101 (Florida Supreme Court, April 18, 1947).

In this case the Florida Court upheld the validity of a municipal ordinance which forbade the granting of a new license for liquor sales in a combined residential and business zone when another licensee existed within a radius of 2500 feet.

Real Estate Offices in Residential Zone

CALIFORNIA. *Jones* v. *Robertson*, 180 Pacific (2d) 929 (California District Court of Appeal, May 21, 1947).

In this case a residential zoning ordinance also allowed all uses of a building which are customarily incident to residence and which do not involve commercial enterprises, including in particular professional offices with a small sign outside. Provision was also expressly made for a temporary real estate office to sell off the rest of the land in the subdivision. However, one Robertson maintained a general real estate brokerage business in his home there.

In passing on a suit under ordinance the Court held that a real estate office was not generally regarded as a professional office and was, therefore, forbidden in this area. The express permission given for a temporary office lent further support to this interpretation of the ordinance. The Court also held that a real estate office could not be regarded as customarily incident to residential use of a piece of property.

"Noxious Businesses" Undertaking Covenants

NEW YORK. *Jones* v. *Chapel Hill, Inc.*, 69 New York Supplement (2d) 753 (New York Supreme Court, February 11, 1947).

Land near the corner of Lexington Avenue and 71st Street in Manhattan was covered by restrictive covenants forbidding slaughter houses, forges, factories, tanneries, distilleries, etc., "or any other noxious or dangerous trade or business." In passing on a proposal (over neighbors' objections) to set up an undertaking establishment there, the Court noted that all the named objectionable uses involved one of two things, either the potentiality of explosion or else noxious odors, and held that in this context undertaking was not a "noxious business." In distinguishing an earlier New York case involving a covenant with similar wording, the Court indicated that the result might be different if the proposed undertaking establishment were to be used for post-mortem operations.

Night Operation of Rock Crusher in Residential-Industrial District

ARKANSAS. *East Arkansas Construction Co.* v. *James*, 199 South Western (2d) 589 (Arkansas Supreme Court, February 17, 1947).

In the area involved in this case, some residences were situated near a varied group of industrial establishments—a shoe factory, a drug warehouse, an old brickyard, a welding establishment, etc. When a rock crusher was put to work 24 hours a day on a highway contract in the area, the residents brought an action to enjoin its use at night as a nuisance, with complaints directed particularly at the noise of gears and back-firing, bright lights, and coarse jokes.

After pointing out that homes had been established here during the earlier industrial development, without any reason to expect very objectionable industrial uses involving a great deal of noise and dust, the Court referred to an old Vermont case preferring the rights of residence generally to rights of trade. An injunction was therefore upheld, forbidding operation of the rock crusher between 7 P. M. and 7 A. M.

Practical Aids to Better Zoning Administration

By JOHN W. REPS

A BASIC premise of all zoning ordinances is that at some future time the uses of land and buildings which do not conform to the regulations of a particular zone will be eliminated. This can be accomplished in three ways, assuming that the text of the ordinance is properly worded: if the use is voluntarily changed to one of a more restrictive classification; if the use is abandoned (which the courts have interpreted as meaning a definite intent to discontinue permanently an existing use); if the use has been discontinued by the municipality through a retroactive clause. Only by the use of this latter method, generally not in effect in most cities, can the municipality take the initiative; the first two methods depend on the actions of the property owner or occupier. It follows from this that under most existing ordinances a close check must be kept on the status of non-conforming uses if the eventual elimination of them is to be anything but a pious hope. Two steps can be taken in this direction.

A List and a Re-check

1. There must be an adequate list of all non-conforming uses legally existing at the time the ordinance was passed. This information can be obtained by requiring all such users to procure a certificate of occupancy at the time the ordinance becomes operative from the proper authority, usually the building inspector or a similar official. Cities which have a zoning ordinance in effect but which have neglected to prepare such a list should do so immediately. This information should be portrayed on a map, using appropriate symbols for the uses shown. Both the list and the map should be published or publicly displayed for, say, thirty days during which time corrections and additions could be made. After that period, no non-conforming use which is not properly registered should have the right to continue.

2. A periodic re-check should be made of all nonconforming uses. Some of them will have been discontinued, and it is important to have a record of when this takes place. The length of time is one factor regarded by the courts as important in determining when legal abandonment (and the loss of the right to resume the former use) takes place. Other uses will have been changed to those in more restricted categories. This may take place even without the issuance of a building permit and a certificate of occupancy; thus it will be necessary to make a record of all such changes to ensure that at some future time the former, and less restricted, use is not resumed. Still other uses may have been legally extended in conformity with ordinance provisions allowing a certain percentage of expansion. These should be noted in the master list and indicated on the map by distinctive symbols to show that the limited amount of extension has already taken place.

Record of Variances

If American cities have failed to eliminate the non-conforming uses legally existing at the time the ordinance went into effect, they are also guilty of compounding the problem by allowing additional uses, which do not conform to the zone regulations in which they are located, through the issuance of variance permits. A certain number of these variances are, no doubt, essential to relieve cases of exceptional hardship. It is now rather widely recognized among planners, however, that far too many of these variances are being granted; unfortunately, this practice is likely to continue for some time. What is not generally realized is that once a variance is granted, it becomes practically impossible to remove the owner's right to continue the property in the new use. According to recent court decisions, for example, a variance runs with the land, not with the owner or occupier; hence, the variance use may be continued in perpetuity. Legal abandonment of a variance use apparently cannot take place, nor would retroactive provisions in the ordinance seem to exercise any control. Nevertheless we may assume that many boards of appeal will continue their present practices, and planners must do what they can to make the best of a difficult situation.

Variances should be recorded and mapped in a fashion similar to that suggested for previously existing nonconforming uses, appropriate symbols again being used on the map to indicate the use permitted. This procedure is likely to result in a more realistic analysis of the present status of variances and consequent administrative methods for treating them in the future.

1. If a very large number of variances appear on the map, this graphic picture *may* deter the board of appeals from continuing to grant them so freely.

2. No zoning ordinance is perfect, and a cluster of variances in one area might indicate the need for rezoning in that spot.

3. An additional map should be prepared showing the variances granted with conditions, and these conditions, insofar as possible, should be indicated graphically. A periodic re-check should be made of these parcels of land, as of the original non-conforming uses, to make certain that the conditions imposed are being fully observed.

4. The preparation and display or distribution of such a series of maps seems only fair to the potential individual property owner or the real estate developer. The zoning ordinance map is only part of the story; the purchaser of property needs to read the later chapters dealing with non-conforming uses, variances and conditional permits. All too often property is acquired after a reference only to the zoning map—the "hidden" zoning through variances can usually be determined only after a careful search through the records of the board of appeals.

Too Much Detail to Be Practical?

The suggestions made above do involve detailed work, particularly the regular re-examination in the field of all non-conforming uses and conditional variances. For the typically over-worked building inspector, the usual administrative officer for the application of the zoning ordinance to particular cases, it may well prove too involved a process. However, it is difficult to see how the full potential in the useful tool of zoning can be realized without following these proposed methods.

Large cities should give serious consideration to the possibility of creating a separate zoning administrator, with sufficient staff to enable him to perform these and other more routine duties adequately. The original zoning proposals and subsequent recommendations for amendments would continue to come from the Planning Commission, which would naturally make use of the graphic and statistical material on file with the zoning administrator. In cities of small and medium size probably this will not be feasible, and in these cases, it seems that the planning commission must necessarily assume some of the duties which might strictly be classified as administrative. Although the writer holds to the concept of the planning commission as a "staff" aid to the chief executive, he also firmly believes that only by considering the problems of administration involved in the realization of plans, lending a hand for actual inspection where necessary, will the commission contribute to making plans a reality.

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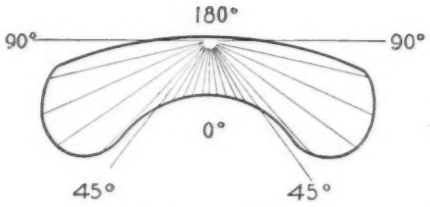

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Conventions—When and Where

Conventions listed this month for the first time are indicated by an asterisk (*)

Sept. 11-12—Albany, N. Y.
AMERICAN PUBLIC WELFARE ASSOCIATION. Northeastern Regional Meeting. Dir., Howard L. Russell, 1313 E. 60th St., Chicago 37, Ill.

Sept. 11-12—Washington, D. C.
CHAMBER OF COMMERCE OF THE UNITED STATES. Businessmen's Conference on Urban Problems (National Chamber Bldg.). Gen. Mgr., Ralph Bradford, 1615 H St., NW., Washington 6, D. C.

Sept. 14-17—Roanoke, Va.
LEAGUE OF VIRGINIA MUNICIPALITIES. Annual Meeting. Sec., Harold I. Baumes, 902 Travelers Bldg., Richmond, Va.

***Sept. 15-19—New Orleans, La.**
ILLUMINATING ENGINEERING SOCIETY. Annual Conference (Hotel Roosevelt). Exec. Sec., A. D. Hinckley, 51 Madison Ave., New York, N. Y.

Sept. 15-27—Cambridge, Mass.
MASSACHUSETTS INSTITUTE OF TECHNOLOGY AND AMERICAN SOCIETY OF PLANNING OFFICIALS. Conference on City and Regional Planning. Dir., Prof. Frederick J. Adams, Massachusetts Institute of Technology, Cambridge 39, Mass.

Sept. 16-19—Boston, Mass.
NEW ENGLAND WATER WORKS ASSOCIATION. Annual Meeting (Statler Hotel). Sec., Joseph C. Knox, 609 Statler Bldg., Boston, Mass.

Sept. 17-19—Louisville, Ky.
KENTUCKY MUNICIPAL LEAGUE. Annual Meeting (The Kentucky Hotel). Exec. Sec., Carl B. Wachs, University of Kentucky, Lexington 29, Ky.

Sept. 17-19—Atlanta, Ga.
GEORGIA WATER AND SEWAGE ASSOCIATION. Short School for Plant Operators (School of Technology). G. R. Frith, Department of Public Health, Atlanta, Ga.

Sept. 18-20—Bay City, Mich.
AMERICAN WATER WORKS ASSOCIATION—Michigan Section. Annual Meeting (Wenonah Hotel). Sec., R. J. Faust, Chief, Div. of Water Supply, State Dept. of Health, Lansing 4, Mich.

Sept. 19-20—Superior, Wis.
WISCONSIN CHIEFS OF POLICE ASSOCIATION. Annual Convention (Hotel Androy). Exec. Sec., Walter H. Wagner, Sheboygan, Wis.

Sept. 21-25—Duluth, Minn.
INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE. Annual Conference (Duluth Hotel). Exec. Sec., Edward J. Kelly, 918 F. St., NW., Washington, D. C.

***Sept. 21-25—San Francisco, Calif.**
AMERICAN INSTITUTE OF PARK EXECUTIVES. Annual Meeting. Exec. Sec., Dave Hovey, Box 422, Rockford, Ill.

Sept. 22-24—Louisville, Ky.
AMERICAN WATER WORKS ASSOCIATION—Kentucky-Tennessee Section. Annual Meeting (Brown Hotel). Sec., R. P. Farrell, Director, Div. of San. Eng., State Dept. of Public Health, 420 6th Ave., N., Nashville 3, Tenn.

Sept. 22-24—Fort Worth, Texas
LEAGUE OF TEXAS MUNICIPALITIES. Annual Meeting (Texas Hotel). Exec. Dir., E. E. McAdams, 2220 Guadalupe St., Austin, Texas.

Sept. 22-25—San Francisco, Calif.
LEAGUE OF CALIFORNIA CITIES. Annual Meeting (Fairmont and Mark Hopkins Hotels). Exec. Sec., Richard Graves, Hotel Claremont, Berkeley, Calif.

Sept. 22-26—New York, N. Y.
AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS. Annual Meeting (Waldorf-Astoria). Exec. Sec., H. H. Hale, 1220 National Press Bldg., Washington, D. C.

***Sept. 23-24—Little Rock, Ark.**
ARKANSAS MUNICIPAL LEAGUE. Annual Meeting (Marion Hotel). Exec. Dir., Glenn G. Zimmerman, 401 Main, North Little Rock, Ark.

Sept. 25-26—Denver, Colo.
AMERICAN WATER WORKS ASSOCIATION—Rocky Mountain Section. Annual Meeting (Cosmopolitan Hotel). Sec., O. J. Ripple, 710 Colorado Bldg., Denver, Colo.

Sept. 29-30—Little Rock, Ark.
AMERICAN PUBLIC WELFARE ASSOCIATION. Southwestern Regional Meeting. Dir., Howard L. Russell, 1313 E. 60th St., Chicago 37, Ill.

Sept. 29-Oct. 1—Los Angeles, Calif.
NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS. Annual Meeting (Biltmore Hotel). General Counsel, Charles S. Rhyne, 730 Jackson Place, NW., Washington, D. C.

Sept. 30-Oct. 1—Columbus, Ohio
AMERICAN WATER WORKS ASSOCIATION—Ohio Section. Annual Meeting (Deshler-Wallick Hotel). Sec., R. P. Fisher, Sales Eng., Wallace & Tiernan Co., Inc., 812 Perry Payne Bldg., Cleveland 13, Ohio.

Oct. 1-2—Grand Rapids, Mich.
INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION, INC. Annual Meeting (Pantlind Hotel). Sec., Irvin Shulsinger, 8 E. 41st St., New York 17, N. Y.

Oct. 1-4—Detroit, Mich.
INSTITUTE OF TRAFFIC ENGINEERS. Annual Meeting (Hotel Fort Shelby). Exec. Sec., Robert S. Holmes, 212 Strathcona Hall, Yale University, New Haven, Conn.

Oct. 2-3—Columbus, Ohio
OHIO CONFERENCE ON SEWAGE TREATMENT. Annual Meeting (Deshler-Wallick Hotel). Sec.-Treas., L. B. Barnes, 441 S. Prospect St., Bowling Green, Ohio.

***Oct. 2-4—Montreal, Canada**
COMMUNITY PLANNING ASSOCIATION OF CANADA. Annual Conference (Mount Royal Hotel). Sec. Treas., Alan H. Armstrong, Room 371, 56 Lyon St., Ottawa, Canada.

Oct. 2-3—Bluefield, W. Va.
AMERICAN WATER WORKS ASSOCIATION—West Virginia Section. Annual Meeting (West Virginian Hotel). Sec., J. B. Harrington, Director, Div. of San. Eng., State Dept. of Health, Charleston, W. Va.

Oct. 5-8—Jacksonville, Fla.
AMERICAN PUBLIC WORKS ASSOCIATION. Annual Meeting. Exec. Dir., D. F. Herrick, 1313 E. 60th St., Chicago 37, Ill.

Oct. 5-9—Coronado, Calif.
INTERNATIONAL CITY MANAGERS' ASSOCIATION. Annual Meeting (Hotel del Coronado). Exec. Sec., Clarence E. Ridley, 1313 E. 60th St., Chicago 37, Ill.

Oct. 6-8—Niagara Falls, Ont.
THE CANADIAN INSTITUTE ON SEWAGE AND SANITATION. Annual Meeting (General Brock Hotel). Exec. Sec., Dr. A. E. Berry, Parliament Bldg., Toronto, Ont.

Oct. 6-10—Chicago, Ill.
NATIONAL SAFETY COUNCIL. Annual Meeting (Stevens Hotel). Exec. Vice-pres., R. L. Forney, 20 North Wacker Drive, Chicago 6, Ill.

Oct. 6-11—Atlantic City, N. J.
AMERICAN PUBLIC HEALTH ASSOCIATION. Annual Meeting. (Convention Hall). Exec. Sec., Reginald M. Atwater, 1790 Broadway, New York, N. Y.

***Oct. 7-11—West Point, N. Y.**
NATIONAL PLANNING ASSOCIATION. Annual Conference (U. S. Hotel Thayer). Sec., John W. Herring, Nassau, N. Y.

Oct. 8-10—Atlantic City, N. J.
PENNSYLVANIA WATER WORKS ASSOCIATION. Sec.-Treas., Mrs. Ethel M. Markley, 510 Telegraph Building, Harrisburg, Pa.

Oct. 8-11—New York, N. Y.
GOVERNMENTAL RESEARCH ASSOCIATION. Annual Conference (Hotel Commodore). Sec., G. Gordon Tegnell, 30 Rockefeller Plaza, New York 20, N. Y.

Oct. 9-11—Cedar Rapids, Iowa
AMERICAN WATER WORKS ASSOCIATION—Iowa Section. Annual Meeting (Montrose Hotel). Sec., H. V. Pedersen, Supt., Water Works, Municipal Bldg., Marshalltown, Iowa.

Oct. 12-15—Colorado Springs, Colo.
NATIONAL ASSOCIATION OF COMMERCIAL ORGANIZATION SECRETARIES. Annual Meeting (Antlers Hotel). Exec. Sec., Elizabeth Glenn, 1615 H Street, NW., Washington 6, D. C.

Oct. 13-15—La Grande, Ore.
AMERICAN WATER WORKS ASSOCIATION—SOUTHWEST SECTION. Annual Meeting (Herring Hotel). Sec., L. A. Jackson, Little Rock Water Works, Little Rock, Ark.

Oct. 13-15—La Grande, Ore.
LEAGUE OF OREGON CITIES. Annual Convention. Sec., Herman Kehrli, University of Oregon, Eugene, Ore.

Oct. 13-17—New York, N. Y.
NATIONAL RECREATION ASSOCIATION. Annual Meeting (Hotel New York). Pres., Howard Braucher, 315 Fourth Ave., New York 10, N. Y.

***Oct. 15-17—Jacksonville, Fla.**
AMERICAN SOCIETY OF CIVIL ENGINEERS. Fall Meeting (Roosevelt Hotel). Exec. Sec., William N. Carey, 33 W. 39th Street, New York 18, N. Y.

Oct. 16-17—Harrisburg, Pa.
MUNICIPAL AUTHORITIES OF PENNSYLVANIA. Annual Conference (Hotel Harrisburger). Sec.-Treas., Claude C. Fogelman, Pennsylvania Municipal Authorities Association, 1717 Main St., Northampton, Pa.

Oct. 16-17—Ocean City, Va.
VIRGINIA INDUSTRIAL WASTES AND SEWAGE WORKS ASSOCIATION. Annual Meeting (Nansemond Hotel). Sec., A. H. Passler, 815 East Franklin St., Richmond 19, Va.

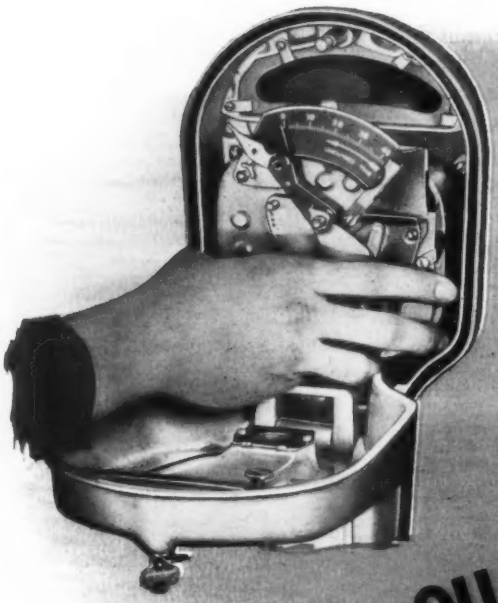
Oct. 23-25—Milwaukee, Wis.
AMERICAN WATER WORKS ASSOCIATION—Wisconsin Section. Annual Meeting (Hotel Schroeder). Sec., L. A. Smith, Supt., Water Works, Madison, Wis.

Oct. 27-28—Jefferson City, Mo.
MISSOURI WATER AND SEWERAGE CONFERENCE. Annual Meeting (Governor Hotel). Sec.-Treas., Warren A. Kramer, State Office Bldg., Jefferson City, Mo.

Nov. 2-6—New Orleans, La.
AMERICAN MUNICIPAL ASSOCIATION. Annual Meeting. Exec. Dir., Earl D. Mallery, 1313 E. 60th St., Chicago 37, Ill.

Nov. 3-5—Atlanta, Ga.
AMERICAN WATER WORKS ASSOCIATION—SOUTHEASTERN SECTION. Annual Meeting. Sec., B. P. Rice, Reconstruction Finance Corp., Bond Service Division, Healey Bldg., Atlanta, Ga.

(*Continued on Page* 131)



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Cities coast-to-coast choose DUAL Automatic Parking Meters to solve traffic control problems

DUALS are chosen by so many cities in the United States and Canada because they are built like a fine time-piece —accurately designed, skillfully engineered, constructed of quality materials.

For example, the mechanism (pictured above) is a completely packaged unit—lifts easily from the case, speeding up installation and what little servicing may be needed. The meter setting works *automatically*—no levers to cause servicing problems. The mechanism and coin receptacle have separate, locked compartments. The cast aluminum housing is weather-proof. And *the meter movement, the most vital part of any meter, is manufactured by the makers of the famous Seth Thomas clocks.*

Rugged, long-lasting Duals are a profitable investment. Long after they have paid for themselves, they provide a steady income that can be used to help pay for off-street parking facilities and in helping to solve other traffic control problems.

Find out about Duals' many fine qualities—how they can help solve your community's parking problems. Send for free, informative Bulletin DU-501 or ask our engineers for helpful service.

THE DUAL PARKING METER COMPANY

A subsidiary of The Union Metal Manufacturing Company

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WHEN IT COMES TO CONTROLLING PARKING YOU CAN DO IT BETTER WITH DUALS

MUNICIPAL OFFICIALS

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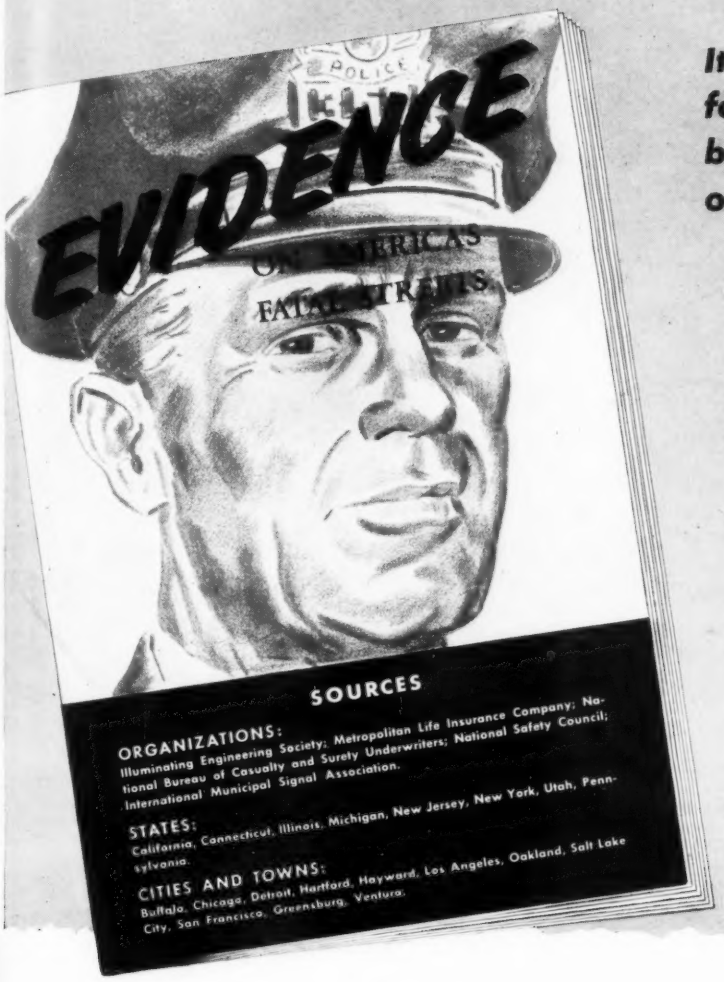
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Friend of the People

NEXT time you're out alone, late at night, give a thought to the friendly street light that helps guide you home—the safety and security you feel under its protective beams.

At Union Metal we're proud we've been able to contribute to bringing about that reassuring feeling to people everywhere. For over 40 years, ever since the beginning of modern street lighting in this country, we've been manufacturing and constantly improving the *steel* standards that support street lights. Today, Union Metal lighting standards are serving faithfully—as friends of the people, as an aid to the law—in hundreds of cities and towns from coast to coast.

There's no better time than now to make plans for improving your community's street lighting. Include Union Metal *steel lighting standards* in those plans—for the extra benefits they bring in safety and economy. The Union Metal Manufacturing Company, Canton 5, Ohio.

We regret the present extended delivery schedules due to the steel shortage, but this is improving and you will find Union Metal lighting standards well worth waiting for.

UNION METAL

Largest Producers of Street Lighting Standards

Conventions—When and Where

(*Continued from Page 130a*)

Nov. 6-8—Atlantic City, N. J.

AMERICAN WATER WORKS ASSOCIATION—New Jersey Section. Annual Meeting (Claridge Hotel). Sec., C. B. Tygert, Box 178, Newark, N. J.

Nov. 10-12—Greensboro, N. C.

NORTH CAROLINA SEWAGE WORKS ASSOCIATION. Annual Meeting (Sedgfield Inn). Sec. Treas., George S. Moore, P. O. Box 125, Albemarle.

Nov. 10-12—Greensboro, N. C.

AMERICAN WATER WORKS ASSOCIATION—North Carolina Section. Anual Meeting (Sedgfield Inn). Sec., G. S. Moore, Supt., Water & Light Dept., Albemarle, N. C.

Nov. 10-14—Orlando, Fla.

SOUTHERN BUILDING CODE CONGRESS. Annual Convention. Dir., M. L. Clement, 750 Brown-Marx Bldg., Birmingham 3, Ala.

Nov. 12-14—Atlantic City, N. J.

NEW JERSEY STATE LEAGUE OF MUNICIPALITIES. Annual Conference. Exec. Sec., James J. Smith, 808 Trenton Trust Bldg., Trenton, N. J.

***Nov. 12-14—Nashville, Tenn.**

NATIONAL MUNICIPAL LEAGUE. Annual Convention. Exec. Sec., Alfred Willoughby, 299 Broadway, New York 7, N. Y.

Nov. 12-14—Pittsburgh, Pa.

ENGINEERS SOCIETY OF WESTERN PENNSYLVANIA. Annual Meeting (William Penn Hotel). Chairman, H. M. Olson, 171 Longue Vue Drive, Pittsburgh, Pa.

Nov. 17-18—Roanoke, Va.

AMERICAN WATER WORKS ASSOCIATION—Virginia Section. Annual Meeting (Hotel Roanoke). Sec. W. H. Shrewbridge, Asst. Engr., State Health Dept., 708 State Office Bldg., Richmond.

Nov. 17-20—New York, N. Y.

NATIONAL ASSOCIATION OF HOUSING OFFICIALS. Annual Meeting (Hotel New Yorker). Exec. Dir., Coleman Woodbury, 1313 E. 60th St., Chicago 37, Ill.

Nov. 17-20—Dallas, Texas

CIVIL SERVICE ASSEMBLY OF THE UNITED STATES AND CANADA. Annual Meeting (Baker Hotel). Dir., James M. Mitchell, 1313 E. 60th St., Chicago 37, Ill.

Nov. 19-21—Washington, D. C.

AMERICAN WATER WORKS ASSOCIATION—Four States Section. Annual Meeting. Sec. Treas., W. A. Welch, 748 Public Ledger Bldg., Philadelphia, Pa.

Nov. 20-22—St. Petersburg, Fla.

AMERICAN WATER WORKS ASSOCIATION—Florida and Cuban Sections. Annual Meeting. Sec. Florida Section, A. P. Black, Prof. of Chemistry, Univ. of Florida, Gainesville, Fla.—Sec. Cuban Section, Lauren H. Daniel, Box 531, Havana, Cuba.

Dec. 1-6—Washington, D. C.

HIGHWAY RESEARCH BOARD. Annual Meeting (National Academy of Sciences). Dir., Roy W. Crum, 2101 Constitution Ave. NW., Washington 25, D. C.

***Dec. 3-7—Cleveland, Ohio**

AMERICAN PUBLIC WELFARE ASSOCIATION. Annual Meeting (Statler Hotel). Dir., Howard L. Russell, 1313 E. 60th St., Chicago 37, Ill.

Recent City Manager Appointments

(*Continued from Page 127*)

WALTER H. BARTHOLOMEW, manager of Dunedin, 1944-45; Tarpon Springs, 1945-46; and Cocoa, since Feb. 1946, has been appointed manager of Jacksonville Beach, Fla.

T. L. CORDLE, former manager of Fuquay Springs and Apex, N. C., and at Lancaster, S. C., since Sept. 1946, has been appointed at Morganton, N. C.

JOHN R. FICKLIO, Asst. Personnel Officer of City and County of San Francisco, has been appointed first city manager at Petaluma, Calif.

C. STANLEY FOX, Asst. City Engineer, Lebanon, has been appointed borough manager of Mechanicsburg, Pa.

WILLIAM A. HANNIG has been appointed city manager of Wheeling, W. Va., succeeding Walter C. Smith who resigned.

LEROY F. HARLOW, manager of Sweet Home, Ore., 1943-45, and at Albert Lea, Minn., since March 1946, has been appointed at Fargo, N. D.

B. F. HEINZ, Safety Director, Portland, Ore., has been appointed first manager of Cottage Grove, Ore.

LEONARD G. HOWELL has been appointed first manager of Madison, Wis., effective Sept. 15.

WARREN HYDE, former manager of Western Springs, Ill., has been appointed City Manager of Albert Lea, Minn., effective Sept. 15.

W. O. JONES, who has been serving as acting manager of Fort Worth, Texas, received the permanent appointment on July 1.

HARRY L. LEVENS has been appointed manager of Ironwood, Mich., succeeding William L. Johnson.

JOE MCCREARY has been appointed manager of Tarpon Springs, Fla., succeeding Col. H. M. Salley, who is returning to the army.

ERNEST L. NEUMANN, former manager of Oak Park, Mich., has been appointed manager of Manistee, Mich.

GILBERT W. RAY, Orange County accountant and tax supervisor, has been appointed city manager of Chapel Hill, N. C.

S. T. SAWYER, JR., has been appointed first manager of Pompano, Fla.

OLIVER J. SEMMES, JR., has been appointed city manager of Pensacola, Fla.

M. B. THOMAS of Anderson, Texas, has been appointed at Navasota, Texas.

CARL J. THORNTON has been appointed manager of Bakersfield, Calif.

C. S. WAUGH has been appointed acting manager of Oak Hill, W. Va.

E. ALAN WEBSTER, an apprentice at Norman, has been appointed first manager of Stigler, Okla.

W. T. WELLS, manager of Radford, Va., since May 1944, has been appointed at Harrisonburg, Va.

CLARENCE E. RIDLEY
Executive Director
International City Managers' Association
Chicago, Ill.

Rent Control and Cities

(*Continued from Page 126*)

Salem, Ore.; and Neosha, Miss., have adopted ordinances on the subject (see 8 *Municipal Law Journal* 4, 80), but no reported court decisions have resulted from this municipal action. Federal control of rents by OPA under the Emergency Price Control Act was held constitutional in *Bowles* v. *Willingham*, 321 U. S. 503, 64 S. Ct. 641, 88 L. ed. 892 (1944). Other cases arising in state and federal courts, all of which uphold the federal power to control rents, are collected in the various annotations entitled "Constitutionality and Construction of Emergency Price Control Act as Related to Rent," 157 A. L. R. 1457, and the other annotations referred to there.

The New York legislation relating to control of commercial rents has been upheld by the highest court of that state in the case of *The Twentieth Century Associations, Inc.* v. *Waldman*, 10 *Municipal Law Journal* 88, 63 N. E. (2d) 177 (1945).

Governmental Research Movement to Celebrate 40th Anniversary

Charles A. Beard and other distinguished guests will participate in meetings marking the fortieth anniversary of governmental research, at the 1947 Annual Conference of the Governmental Research Association, October 8-11, at the Hotel Commodore in New York.

Dr. Beard will join Governor Driscoll of New Jersey in speaking at the banquet on October 10, with Carl P. Herbert, President of the GRA, presiding.

The conference will open with a luncheon on October 8, at which Luther Gulick, President of the Institute of Public Administration, will preside, and Mayor William O'Dwyer of New York, and Henry Bruere, President of the Bowery Savings Bank, will be speakers.

Others speakers and meeting chairmen will include William H. Allen, John W. Hanes, Congressman John Taber, Oxie Reichler, Robert Hudson, Allen W. Harris, Loren B. Miller, Carter W. Atkins, Austin J. Tobin, Lent D. Upson, Leslie M. Gravlin, Lennox L. Moak, Robert K. Sawyer, Carl R. Dortch.

The Municipal Bond Market

(Some sales of new issues reported in August issues of *The Bond Buyer*)

Amount	*Borrower and Purpose*	*Rate (%)*	*Term (Years)*	*Basis (%)*
$ 145,000	Fairfield, Conn., Veterans' Housing of 1947	1	2.83 Avg.	.83
150,000	Abington Tp., Pa., Sewer	1	3.33 Avg.	.94
95,000	Rome, N. Y., Street Reconstruction	1.10	5.50 Avg.	1.064
22,500	Neodesha, Kans., Airport Construction	1.13	6-10 Ser.	1.183
100,000	Minneapolis, Minn., Street Tree Revolving Fund	1.25	1-10 Ser.	1.184
99,400	Mansfield, Ohio, Special Assessment	1.25	2.50 Avg.	.987
100,000	Petoskey, Mich., Electric Light of 1947	1.25	14.17 Avg.	1.4724
135,000	Bristol, Va., Water Works, Sewer and Street Improvement	1.50	1-9 Ser.	1.8889
80,000	Bottineau, N. D., Sch. Dist.	1.75	8 Avg.	1.71
150,000	Kendallville, Ind., Electric Utility Revenue	1.75	6.17 Avg.	1.58

XUM

When Fire Engines Can't Get Through...

the cost of traffic congestion is becoming too high

In one eastern city, motorized fire equipment can't get to fires as fast as horsedrawn units did fifty years ago. Imagine what this slowdown costs in time, money, and lives!

In every city, traffic jams are choking and squeezing the vital movement of people and goods to a stop. And if you think conditions are bad now, wait until automobile production really hits full stride!

Since automobiles carry an average of only 1.75 persons per vehicle, each passenger uses 500 square feet of street space and 140 square feet of parking space. Compared with the 70 square feet of street space required by a transit rider, public transit vehicles use streets seven times as efficiently. They carry as many people as 25 automobiles—and use not an inch of parking space.

That's why you should join forces with your public transit company to persuade more people to ride by transit and leave their automobiles at home. And one vehicle you'll want to help you do it is the electric trolley coach.

Swift, smooth-riding, maneuverable trolley coaches have all the riding features that people prefer—ask the people who ride them. And ask the transit men who operate them. They'll tell you about the super earning power of trolley coaches that's enabling them to improve service and modernize facilities.

If your city is not yet served by fast, quiet trolley coaches, find out from your G-E representative on which lines these electrics would be economically best suited. *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

Have you seen *Lifestream of the City*, the movie that shows how to reduce traffic congestion? Ask your G-E representative to arrange for a showing.

GENERAL ELECTRIC

Traffic Control and Facilitation

Let a Traffic Engineer Do It

By DONALD S. BERRY, *Director Traffic and Transportation Division National Safety Council, Chicago, Ill.*

HALF of all travel takes place on city streets, which comprise only 10% of the total road mileage. Most cities today face the same problems of traffic congestion and accident prevention which they faced in the last year before the war. These problems can be grouped into six classifications: inadequate street capacity, lack of parking space, intersection controls, speed control, pedestrian protection, and other control measures such as one-way streets, pavement markings, and no-parking zones.

Facts Needed

Traffic engineering techniques have been developed for studying these problems and for developing solutions to fit the locations. These techniques should be applied by specialists and should supplant the antiquated method of basing solutions to traffic problems on opinions. In other fields of engineering, city officials and the public recognize the need for specialists. In sanitary engineering, for example, specialists design the sewerage system only after careful study. It is essential in traffic engineering, also, that proper techniques be used for determining the appropriate remedies.

Last year, the report of the Committee on Engineering of the President's Highway Safety Conference recommended that for cities with a population of more than 100,000, a traffic engineering unit should be established in the city government, comparable to other divisions of the public works; that cities with from 50,000 to 100,000 population should employ at least one full-time traffic engineer with sufficient authority delegated to him for traffic engineering functions; that in cities with a population of less than 50,000, the responsibility for traffic-engineering functions be delegated to an engineering official, such as the city engineer, head of the department of public works, or some other employe in the engineering department, and that opportunities should be given this person to obtain necessary training and experience.

After traffic-engineering functions have been assigned to an engineer, traffic regulations and restrictions should be brought up-to-date by modernizing the city's traffic ordinance. Engineering studies should be made to prepare up-to-date schedules of through streets, one-way streets, parking prohibitions and restrictions, and speed zones.

An inventory should be made of traffic signs, signals, and pavement markings to make certain that they fully conform with uniform standards as required by state law. A schedule for replacement of non-standard signs with uniform signs should be established, along with a program of modernizing traffic control signals. All complaints, evidence of high-accident location, and suggestions should be referred to the traffic engineer for study. Plans for street improvements, and applications for permits for curb cuts and for public and industrial building construction, should be reviewed by him from the standpoint of street capacity and safety. Schedules for routine activities should be maintained, such as schedules for inspecting, reconditioning, and periodic maintenance of signs and signals; schedules for placing and maintaining pavement and other markings; records of traffic signs, play streets, and loading zones. There should be ready access to accident records, including spot maps and location files, so that this information may be used in studying any location.

Analysis of City's Performance Available

In many cities, origin- and destination-traffic surveys are aiding the communities in locating express highways and in making plans for off-street parking facilities. At present, the National Safety Council is preparing analyses of information on the reports which cities submit to the Council in the National Traffic Safety Contest. This information deals not only with traffic engineering administration and activities, but also with work done in traffic law enforcement, and in keeping and using accident records. The information submitted in these city reports is tabulated by the Council's engineers, and rates are computed on the basis of the population of cities of comparable size. A city may then request that an analysis be prepared of its accident-prevention activities as reported. The analysis is prepared for the city, comparing each item of the city's performance with that performance which would be needed for the city to rank among the leading 30% in its population group. The analysis then is presented either by a Council engineer or by the cooperating state people. The analyses deal primarily with the administrative aspects of traffic management and control and stress the need for assigning the responsibility for each of the three aspects of traffic-accident prevention.

Parking Meters Operate In 1,209 Cities

THE POSITION of the parking meter as an aid in relieving parking congestion is forcibly indicated by new figures just issued by Vehicular Parking, Ltd., Canton 5, Ohio. On June 30, 1947, there were 1,209 municipalities operating a total of 493,000 meters.

The parking meter first appeared twelve years ago in Oklahoma City. During the next ten years, 472 other cities installed meters to make the number 473 on December 30, 1945. One year later, there were 924 parking-meter cities, and in the last one and one-half years, 735 cities changed to metered parking, bringing the current total to over 1,200 cities.

The plunk of millions of nickels into parking meters all over the country is sounding a warning note to the highway-user groups concerned over diversion of highway-user taxes. Although there are no general figures for the amount of this diversion of parking-meter nickels to other purposes, it is known to be heavy in some cities, according to the National Highway Users Conference. Director Arthur C. Butler believes that after expenses are paid, the rest of the revenues could help to relieve the parking crisis that grips almost every American city. "The original function of the parking meter," Butler reminded, "was supposed to be a fairer division of parking time at the curb. Few, if any, cities that installed them ever planned that they should supply general revenue."

PARK-O-METER WINS

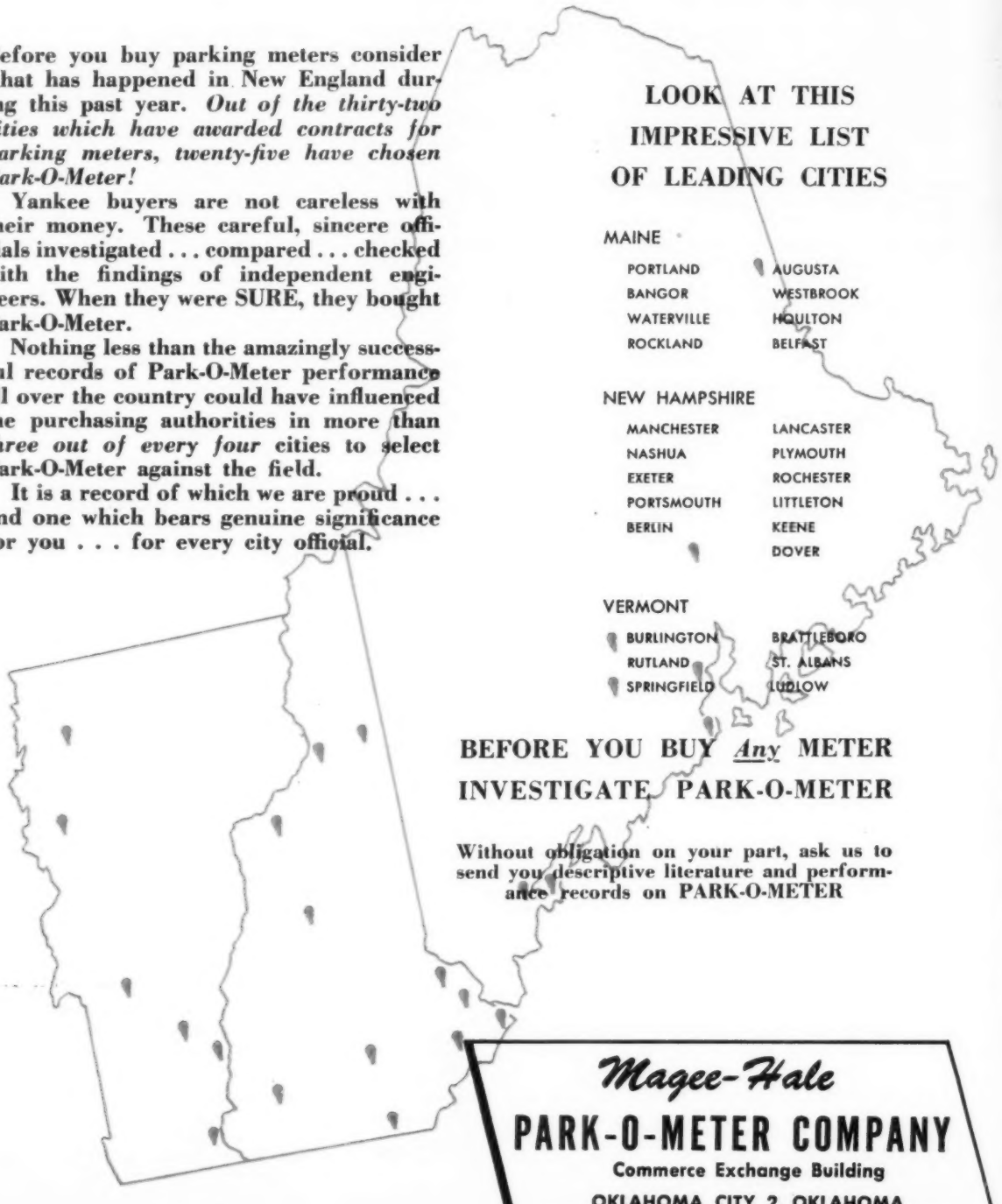
in 25 out of 32 Cities in "*Yankeeland*"

Before you buy parking meters consider what has happened in New England during this past year. *Out of the thirty-two cities which have awarded contracts for parking meters, twenty-five have chosen Park-O-Meter!*

Yankee buyers are not careless with their money. These careful, sincere officials investigated . . . compared . . . checked with the findings of independent engineers. When they were SURE, they bought Park-O-Meter.

Nothing less than the amazingly successful records of Park-O-Meter performance all over the country could have influenced the purchasing authorities in more than *three out of every four* cities to select Park-O-Meter against the field.

It is a record of which we are proud . . . and one which bears genuine significance for you . . . for every city official.



LOOK AT THIS IMPRESSIVE LIST OF LEADING CITIES

MAINE

PORTLAND	AUGUSTA
BANGOR	WESTBROOK
WATERVILLE	HOULTON
ROCKLAND	BELFAST

NEW HAMPSHIRE

MANCHESTER	LANCASTER
NASHUA	PLYMOUTH
EXETER	ROCHESTER
PORTSMOUTH	LITTLETON
BERLIN	KEENE
	DOVER

VERMONT

BURLINGTON	BRATTLEBORO
RUTLAND	ST. ALBANS
SPRINGFIELD	LUDLOW

BEFORE YOU BUY *Any* METER INVESTIGATE PARK-O-METER

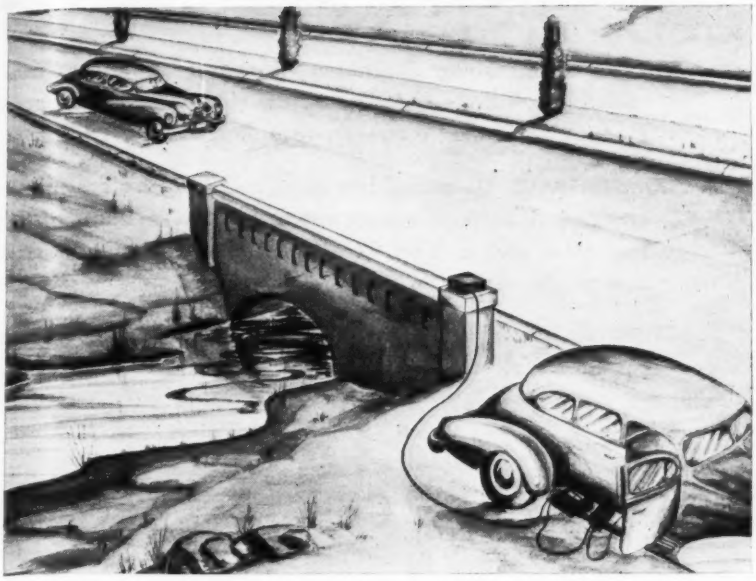
Without obligation on your part, ask us to send you descriptive literature and performance records on PARK-O-METER

Magee-Hale

PARK-O-METER COMPANY

Commerce Exchange Building

OKLAHOMA CITY 2, OKLAHOMA



The small transmitter box on the highway bridge is the only visible portion of the radar electromechanical meter, which Connecticut State Police are going to use to convict speeders. The transmitter box is connected by cables to the indicator-amplifier and to a storage battery.

Radar Catches Connecticut's Speeders

SPEEDERS on Connecticut's highways will no longer be able to argue with the traffic officer about whether they were driving forty or sixty miles per hour. An electromatic speed meter, operating on the same principle as wartime radar, records the operator's speed on a revolving sheet of paper.

The speed meter, manufactured by the Automatic Signal Division of Eastern Industries, East Norwalk, Conn., when set up near a highway, sends a constant microwave signal in any direction. A moving car reflects the wave, causing a shift in wave length proportional to the speed of the car. Automatic mechanism in the meter compares instantaneously the direct signal from the transmitter and the reflected signal from the moving car. The difference is translated and recorded into miles per hour on a visible dial and also on an inked tape, in the event that the evidence might be needed in court. If the dial shows the speed to be beyond the limits, the car's license plate is jotted down by the patrolman, and the number is radioed down the road to a waiting patrol car.

"Speeders who keep an eye on the rear view window looking for a patrol car will find themselves spotted by an insignificant box at the side of the road," Captain Buckley, in charge of traffic for the Connecticut State Police, says. "The radar eye is accurate within two miles an hour at any speed under a hundred."

Staggered Hours One Solution to Traffic Problems

AT a recent meeting of the Cincinnati Automobile Club, which was attended by city officials, merchants, and representatives of civic organizations, a phenomenal plan for solving that city's downtown traffic congestion during rush hours was suggested. The proposal called for a return to the wartime program of staggered working hours. It was pointed out that the Cincinnati Street Railway during the war was able to carry 400,000 passengers during the day only because the shift-hour working system was in effect.

Also proposed was a city-wide parking ban along major traffic arteries between 4 and 6 p.m. Designed to permit heavy traffic to move swiftly without interruptions, the plan would provide a strictly enforced no-parking order. Other suggestions included the elimination of turns at many intersections; a light for pedestrians only, so that autos may move freely on the green light, and special bridges or overpasses for pedestrians.

Kansas City Keeps Up-to-Date With New Street Signs

This special design was put into effect in a re-signing program in 1936 to standardize street signs throughout the city. The signs are finished in porcelain namel.

KANSAS CITY is keeping its street-sign program up to date with a recent order for 1,200 new signs, including the necessary assembly and mounting fittings. These are for installation in a newly annexed area and for replacement of signs that had been destroyed during the past few years in other sections. A complete re-signing of all intersections was accomplished in 1936 as part of a bond issue, and a special design was prepared at that time for the city's signs. The 1,200 signs now on order will fit plans and specifications prepared by the city in order to have standardized street signs throughout Kansas City. The recent $13,900 order was placed with the Mercury Stamp and Manufacturing Company.

T. J. SEBURN, *Traffic Engineer*
Department of Public Works
Kansas City, Mo.

Shoppers To Pay For Parking Lots

WHITE PLAINS, N. Y., wants to solve its parking problem without adding to the already high municipal budget. A five-man parking authority has been appointed by Mayor Silas S. Clark for the acquisition and development of a system of parking lots to rim the White Plains shopping area. White Plains, county seat of wealthy Westchester county, is a popular shopping center with branches of several of New York city's leading department stores. The number of shoppers is seven times that of the city's population, which is 40,327.

The plan is for these shoppers to defray the costs of building and operating the places provided for them to park their cars.

Old Folks Like Trolley Coaches because

THEY'RE SAFE. Trolley Coaches are the safest rubber-tired transit vehicle. Curb loading, freedom from skidding, and absence of gasoline fire danger put elderly people at ease.

. . . **COMFORTABLE.** Deep-cushion seats make riding restful—uncramped. Unlimited energy supply permits a flood of light for easier seeing. There are no nauseating fumes . . . ample heat to all seats.

. . . **SMOOTH.** No violent, lurching stops and starts. Aged or infirm passengers like the even acceleration and satin-smooth ride.

Commuters Like Trolley Coaches because

THEY'RE RELIABLE. Dependable motive power keeps Trolley Coaches on schedule, in all weather . . . over all terrain. Newly-developed Trolley Coaches mean fewer breakdowns.

. . . **WELL-LIGHTED.** Unlimited energy supply means better lighted steps and aisles for safety . . . more light for reading. The smooth, no-jolt, no-jerk glide is conducive to easier reading.

. . . **FASTER.** The high maneuverability of Trolley Coaches means less traffic delay, gets commuters to their jobs and homes faster.

Hospital Authorities Like Trolley Coaches because

THEY'RE QUIET. The soft whisper of rubber tires and the quiet whir of electric motors are all you hear as a Trolley Coach passes . . . no clashing gears nor noisy motors.

. . . **ODORLESS AND CLEAN.** Objectionable exhaust gases are completely unknown . . . no dirt-carrying fumes to irritate patients.

. . . **ON THE MOVE.** They don't snarl up traffic. Because Trolley Coaches can swing around obstructions, traffic moves smoothly, quietly.

Find out today how Trolley Coaches serve every segment of your community . . . homeowners, hospitals, commuters, old folks, teenagers, shoppers. Call your nearest Westinghouse office. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa. J-15134

Westinghouse

PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

WESTINGHOUSE ELECTRO-CAM

SERVING THE CITIES

A Thousand New Signs Keep Traffic Alert

A VARIETY of 848 traffic and parking signs plus 217 new street-name signs were installed in Highland Park, Mich., during 1946. Six speed signs, 592 parking signs, and 250 miscellaneous ones, all manufactured by the Hunt Company, Detroit, Mich., make up the total traffic- and parking-sign installations. The street-name signs, lettered black on yellow, are mounted on 2-inch pipe posts, approximately 8 feet from the ground. The manufacturer is Grote Manufacturing Company, Bellevue, Ky.

C. J. WHITE
Superintendent of Police
Highland Park, Mich.

New Metered Parking Lot

BIDS were received August 12 by Montclair, N. J., for 715 parking meters, 548 for street use and 167 for the first of the municipal parking lots which will be metered. The downtown lot has been completed and awaits only the installation of meters. The Town Commission has appropriated money for three other lots, one now ready for all-day parking and two for which property must be acquired. Three manufacturers were invited to bid for the initial 715 meters: Magee-Hale Park-O-Meter Co., Oklahoma City 2; Karpark Corp., Cincinnati 6; Duncan Meter Corp., Chicago 22. In addition to the above 4 new lots, Montclair has 4 unmetered lots in operation and has plans for 8 more.

Growth of Trolley Coach Transportation

*

More Than 6400 Trolley coaches in operation in 47 American Cities—2359 on order

In 1946 trolley coach orders broke all previous records. Totalling 2147, orders in 1946 nearly doubled the 1945 figure, and quadrupled the prewar yearly average.

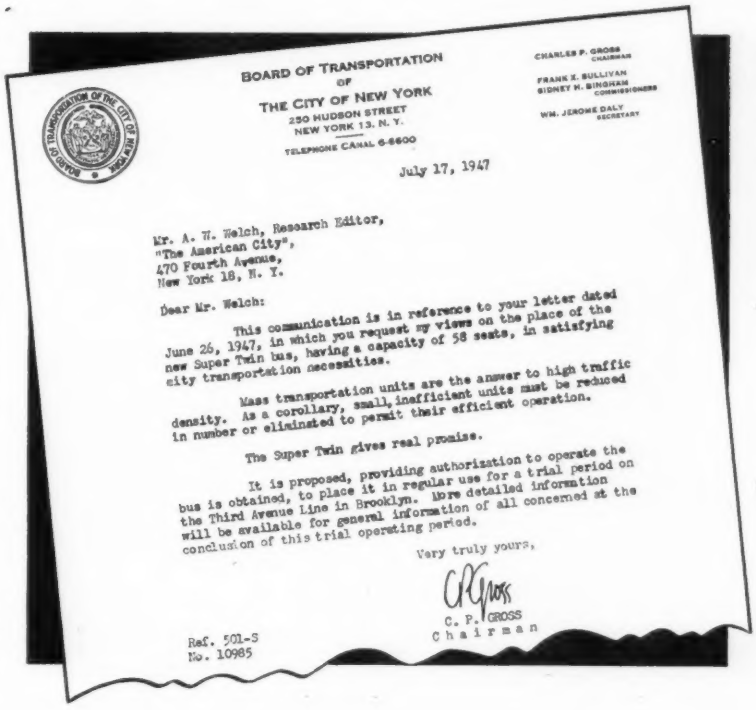
The first trolley coach in the United States was a "trackless trolley" operating between Hollywood and Bungalow Town, California, in 1910.

Of the recent orders referred to above, Cleveland Transit leads the parade with the purchase of 250 units.

The average annual power consumption per trolley coach is 75,000 kilowatt hours.

* From June 1947 *Load*, published by the General Electric Company, Schenectady, N. Y.

"Super Twin Gives Real Promise"



BOARD OF TRANSPORTATION
OF
THE CITY OF NEW YORK
250 HUDSON STREET
NEW YORK 13, N. Y.
TELEPHONE CANAL 6-8600

CHARLES P. GROSS, CHAIRMAN
FRANK X. SULLIVAN
SIDNEY H. BINGHAM, COMMISSIONERS
WM. JEROME DALY, SECRETARY

July 17, 1947

Mr. A. W. Welch, Research Editor,
"The American City",
470 Fourth Avenue,
New York 16, N. Y.

Dear Mr. Welch:

This communication is in reference to your letter dated June 26, 1947, in which you request my views on the place of the new Super Twin bus, having a capacity of 58 seats, in satisfying city transportation necessities.

Mass transportation units are the answer to high traffic density. As a corollary, small, inefficient units must be reduced in number or eliminated to permit their efficient operation.

The Super Twin gives real promise.

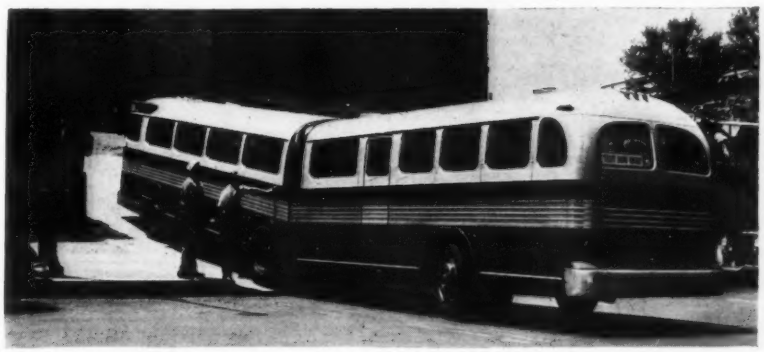
It is proposed, providing authorization to operate the bus is obtained, to place it in regular use for a trial period on the Third Avenue Line in Brooklyn. More detailed information will be available for general information of all concerned at the conclusion of this trial operating period.

Very truly yours,

C. P. GROSS
Chairman

Ref. 501-S
No. 10985

Below: The rubber hips of the Super-Twin Coach allow the 47-foot-long rubber-sprung bus to bend in the middle and ascend and descend a steep ramp in a parking lot as it makes a test run in New York. The "steering" of rear wheels enables the bus to make a shorter turn than conventional buses.



A FIFTY-EIGHT-SEAT bus with a flexible backbone to enable it to make sharp turns was demonstrated in June to transit officials of New York and other Eastern cities in a trial run from Manhattan to Forest Hills, Queens. It was reported that on the trial ride, the bus traveled so smoothly that bumps failed to jar the needle off the records of an old-fashioned phonograph placed on a bus seat. This Super Twin bus, manufactured by the Twin Coach Company, is the largest capacity city-type bus in the world, measuring 12 feet longer than the longest urban bus now in use. The body weight is distributed over three axles. Two sections of the vehicle are joined together behind the center axle by means of a Torsilastic rubber hinge. Because it is hinged in the vertical plane only, the Super Twin cannot jackknife. Short turning radius is achieved by the front and rear wheels automatically acting in concert.

It is said that the Super Twin is easier to drive than the conventional buses because of this power steering feature.

A Long Term Investment that Starts Paying Off from the First Day . . .

HAZARD

PERFORMITE SIGNAL CABLE

for Police, Fire and Traffic Systems

FROM the day installation starts, you'll be more and more satisfied that you selected Hazard Performite insulated cable for those long awaited new signal circuits for fire alarm, police signals and traffic control.

Important installation time is saved with Performite insulation because it's so free-stripping . . . always leaves the conductor clean and bright. Add to this advantage, its excellent heat resistance and its long life – and it's easy to see why Hazard signal cable has become so firmly established in municipal service.

Let Hazard engineers explain all the facts to you and help you in planning your improved signal systems. Hazard Insulated Wire Works, Division of The Okonite Company, Wilkes-Barre, Pa.

TROUBLE-FREE SERVICE FOR YEARS AND YEARS. Performite super-aging insulation has been standard for signal cable since 1932. Underground as well as Spiralweave aerial cables made with Performite rubber insulation meet I.M.S.A. specifications and are constructed from conductor to sheath to provide long, trouble-free service.

SAVES INSTALLATION TIME . . . Performite insulation is free-stripping, always leaves the conductor clean and bright.

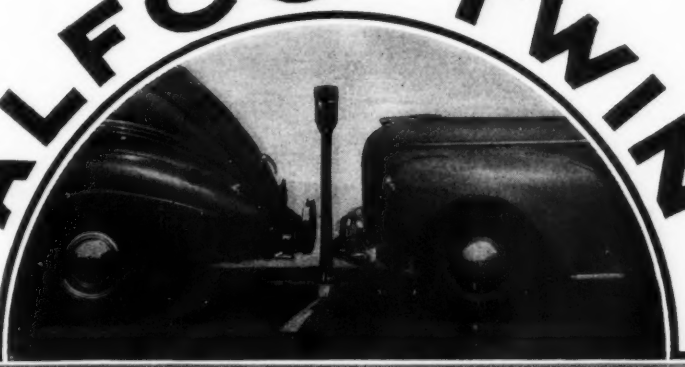
HAZARD

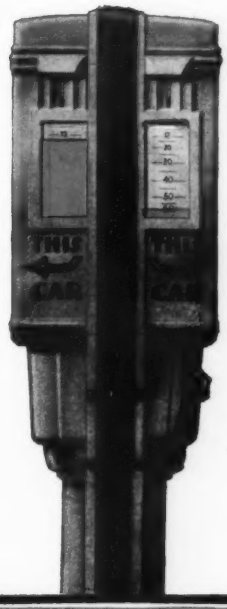
6003

insulated wires and cables for every electrical use

New!

ALFCO TWIN





AUTOMATIC PARKING METER

ONE Twin serves TWO spaces.

Costs About 50% LESS to Buy, and is 50% MORE PROFITABLE to Own!

The Alfco "Twin" Automatic saves a city about 50% of the initial cost of installation of parking meters, eliminates half the side-walk encumbrances and in addition saves the city 50% of the *annual* costs of maintenance, service, collection and all other costs incidental to the upkeep of parking meters.

Further information sent upon request.

Yes

TWINS CAN BE USED ON PRESENT POSTS IF DESIRED

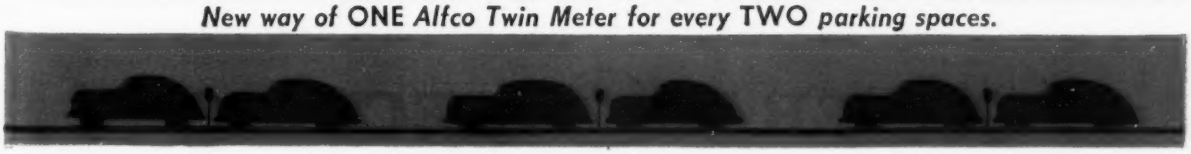
INTERNATIONAL METERS, INC.

41 EAST 42ND ST. • NEW YORK 17, N. Y.

A SUBSIDIARY OF AMERICAN-LAFRANCE-FOAMITE CORP.
ELMIRA, N. Y.

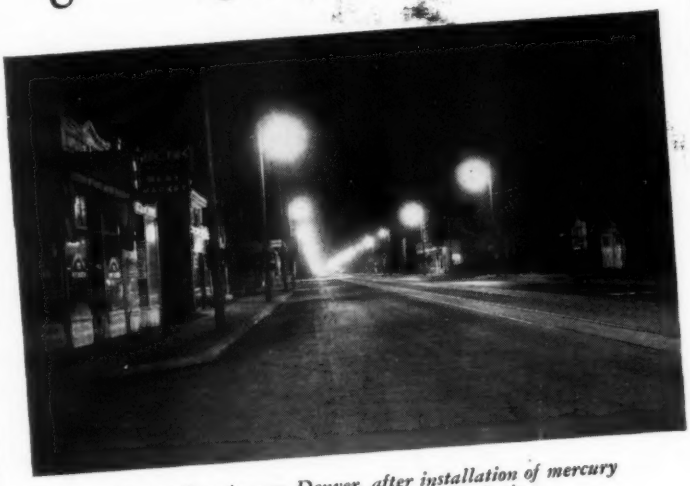
Old method of a separate meter for each single space.

New way of ONE *Alfco Twin Meter for every* TWO *parking spaces.*



A good example of HOW TO GET MORE STREET LIGHTING PER DOLLAR

Measuring horizontal foot-candles on pavement—one of several on-the-spot studies often required in properly planning street lighting.



West Colfax Avenue, Denver, after installation of mercury lighting with G-E Form 79D Luminaires.

survey service, available to all communities, points the way to lighting savings.

A few years ago, officials of Denver and of the Public Service Company of Colorado that serves it, decided that portions of the street-lighting system should be replaced. They requested General Electric to aid in making a comprehensive survey of lighting needs.

This was done. Lighting intensities were checked and compared with latest standards. Specific types of modern equipment were selected for the various classes of streets. Finally, a complete plan for modernizing all lighting over a 5- or 10-year period was developed in co-operation with city and power-company experts.

Modernization is now under way—following this plan. It will provide this progressive city with lighting meeting the latest IES Code—with maximum interchangeability of equipment—and with far more light per dollar than was delivered by the older equipment.

When You Contemplate New Street Lighting . . .

The service furnished Denver is typical of that provided for scores of cities. General Electric Lighting Specialists will be glad to help any public officials—in collaboration with the electric-service company, if one is involved—to work out requirements for a single corner or an entire city. These specialists are located in G-E offices throughout the country.

Available Without Cost

This service is available without cost. It is of top professional quality. It is offered by the company that makes every type of light source and luminaire that is economically feasible for any street lighting job—a company that is therefore sincerely interested in seeing that users get equipment that best meets their needs. *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

GENERAL ELECTRIC

Standards for Well-Planned Street Lighting

By L. C. BROWN
Engineer, Lamp Division
Westinghouse Electric Corporation
Bloomfield, N. J.

PLANNED street lighting, which follows the suggestions in *Recommended Practice for Street and Highway Lighting*, issued by the Illuminating Engineering Society, will involve the following considerations:

1. Traffic classification of the street.
2. Determination of the proper lighting intensity for the street classification.
3. Selection of luminaires according to the light distribution needed for the street.
4. Determination of the mounting heights of the luminaire above the road surface and the proper linear spacing between luminaires.

The diagrams and table accompanying this article will assist the street-lighting engineer in the accurate planning of an installation.

Streets are classified under several types, each with its own requisite for adequate lighting intensity. A very light traffic street, with the number of vehicles per hour under 150, should have an illumination of 0.2 lumens per square foot. On a street with light traffic—150 to 500 vehicles per hour—the lighting intensity should vary from 0.8 lumens per square foot to 0.2 lumens per square foot, depending upon the amount of pedestrian traffic. Medium-traffic streets, those with from 500 to 1,200 vehicles per hour, must have an illumination of from 1.0 to 0.6 lumens per square foot, varying with the number of pedestrians. Those streets with 1,200 or more vehicles per hour—in the heaviest vehicle traffic classification—should be lit by 1.2 lumens per square foot when pedestrian traffic is heavy, and by 0.8 lumens per square foot when the traffic is light.

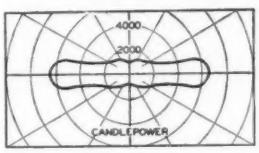
These recommended illumination levels are the minimum average values on the roadway between curbs. The lowest intensity at any point should not be less than one-fourth of these values. The illumination recommended should be increased 50% if there is little reflection, and when there is a high amount of reflection the recommended values may be decreased 25 percent.

Luminaires should be selected according to their pattern of light distribution, in order to conform to both the light intensity required and the physical characteristics of the street to be lighted. Five typical candle-power distribution types, showing lateral distribution in the 75-degree maximum distribution cone, are also illustrated here. The table on the right specifies various combinations of luminaire types, spacings, proper mounting heights, and lamp sizes required to provide specific foot-candle values.

Below: Five-candlepower distribution types showing lateral distribution in the 75-degree maximum cone. The table, right, shows various combinations required to provide specific foot-candle values.

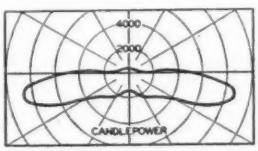
TYPE I LUMINAIRE
Two-Way Distribution

Intended for luminaire mounting approximately over the center of the street. It projects two beams of light in opposite directions along the street, their axis being parallel with the curb line.



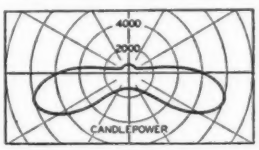
TYPE II LUMINAIRE C-WAY
Narrow Asymmetric Distribution

Intended for luminaire mounting at or near the side of the street. It provides narrow distribution, having a lateral width up to approximately 25° in the cone of maximum candlepower.



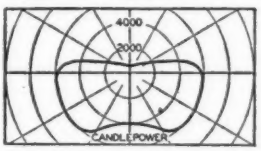
TYPE III LUMINAIRE B-WAY
Medium Width Asymmetric Distribution

Intended for luminaire mounting at or near the side of the street but having a lateral width up to approximately 45° in the maximum cone. It is intended for wide streets.



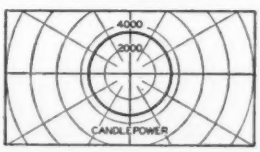
TYPE IV LUMINAIRE A-WAY
Wide Asymmetric Distribution

Still wider laterally than type III. The width is about 90° in the cone of maximum candlepower at approximately 75°.



TYPE V LUMINAIRE
Symmetric Distribution

Candlepower in the 75° cone is the same through 360°. It is useful where lighting must be installed in center parkways and to some extent for intersections.



Footcandles	Street Width (Feet)	Lamp Lumens	Type Distribution	Luminaire Arrangement	Mounting Height	Approx. Spacing (Feet)
0.2	30	2500	I	Center	25	170
	30	2500	II	Staggered	20	165
	30	4000	I	Center	25	200
	40	4000	II	Staggered	25	200
	40	4000	III	Staggered	25	200
0.3	30	4000	I	Center	25	180
	30	4000	II	Staggered	25	150
	40	6000	II	Staggered	25	210
	40	6000	III	Staggered	25	210
0.4	40	6000	II	Staggered	25	155
	50	6000	II	Staggered	25	135
	50	6000	III	Staggered	25	140
	50	6000	IV	Staggered	25	110
0.5	40	6000	II	Staggered	25	125
	50	6000	II	Staggered	25	110
	50	6000	III	Staggered	25	110
	50	6000	IV	Staggered	25	90
0.6	50	10000	III	Staggered	30	140
	60	10000	III	Staggered	30	125
	60	10000	IV	Staggered	25	115
0.7	50	10000	III	Staggered	30	120
	60	10000	III	Staggered	30	110
	60	10000	IV	Staggered	25	95
0.8	50	10000	III	Staggered	30	105
	60	10000	III	Staggered	30	95
	60	10000	IV	Staggered	25	85
	70	10000	III	Staggered	30	85
	70	10000	IV	Staggered	25	75
1.0	60	10000	III	Staggered	30	75
	60	10000	IV	Staggered	25	70
	70	10000	IV	Opposite	25	120
	80	10000	IV	Opposite	25	110
1.2	60	15000	IV	Staggered	30	75
	70	15000	IV	Opposite	30	130
	80	15000	IV	Opposite	30	120
1.4	60	15000	IV	Opposite	30	120
	70	15000	IV	Opposite	30	110
	80	15000	IV	Opposite	30	100
1.6	60	15000	IV	Opposite	30	105
	70	15000	IV	Opposite	30	95
	80	15000	IV	Opposite	30	90
1.8	60	15000	IV	Opposite	30	95
	70	15000	IV	Opposite	30	85
	80	15000	IV	Opposite	30	80
2.0	60	15000	IV	Opposite	30	85
	70	15000	IV	Opposite	30	75
	80	15000	IV	Opposite	30	70

The NEW CROUSE-HINDS NEON Pedestrian Signals

SAVE lives because pedestrians **OBEY** their positive command!

Type TNO-1 NEON Pedestrian Signal

Crouse-Hinds Catalog 226 lists a complete line of traffic signals, beacons, flashers, and a series of controllers designed to help you solve your traffic control problems ... from simple installations up to the most complex heavy traffic problem. Send for your copy.

Sustaining Member of I.M.S.A.

A Nationwide Distribution Through Electrical Wholesalers

CONDULETS
FLOODLIGHTS
TRAFFIC SIGNALS
AIRPORT LIGHTING

Now you can really do something about one of the major causes of death and injury .... the reckless pedestrian at dangerous intersections. Crouse-Hinds NEON Pedestrian Signals are recognized by the pedestrian as his own signal, designed and installed especially for his protection. He is impressed by their distinctive shape and color, radically different from the conventional three-color vehicular traffic signals. Install them in the direct line of vision of the streams of pedestrian traffic and note the remarkable improvement in pedestrian control. They are needed at all extra-busy corners and are invaluable at acute-angle intersections where there is a wide expanse of pavement for pedestrians to cross.

Where used as vehicle information signs, such as "NO LEFT TURN" and "ONE WAY", these Crouse-Hinds NEON units give positive information to the motorist 24 hours a day.

Crouse-Hinds NEON Pedestrian Signals and Traffic Signs have been carefully designed to meet the most exacting requirements. The entire housing is made of cast aluminum and the front door is equipped with "Plexiglass" which protects the tubing from the weather. A cast hood increases day-time visibility. The letters are 4½" high, all red or a red-green combination. These units are available in both one-line and two-line types. They can be mounted like a conventional traffic signal ... on top of a post, on bracket arms, on a span wire, or on a mast arm.

Write for descriptive circular, Type TNO. It contains full details and catalog listings of the 14 variations that are regularly furnished.

Our 50th Anniversary
1897 – 1947

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Incandescents Replace Arcs

By ARTHUR BLESSING, *Director Department of Traffic and City Planning, Schenectady, N. Y.*

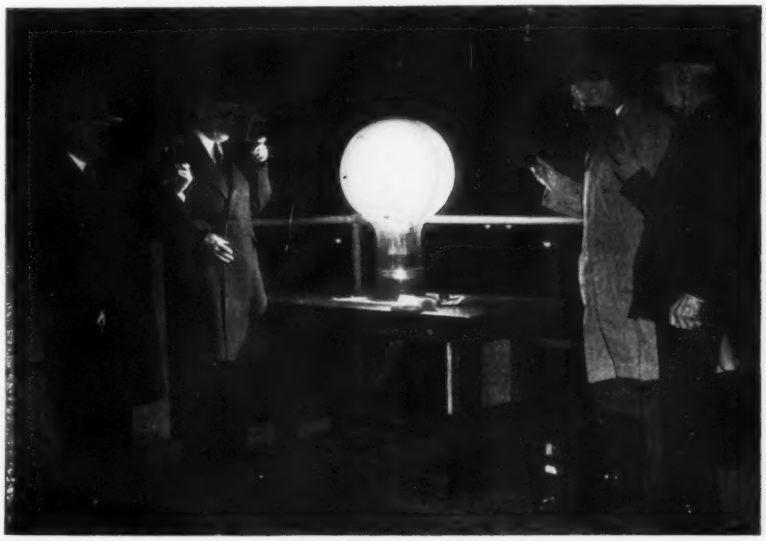
OVER a five-year period, it was observed that on State Street, Schenectady's main street, approximately 88% of the traffic fatalities occurred at night. To remedy this situation, city officials, with the cooperation of the Street Lighting Department of the New York Power and Light Corporation and the General Electric Illuminating Laboratory, embarked on a city-wide street-lighting survey. Primary business and traffic streets were considered first.

Typical among these was Erie Boulevard, Schenectady's widest street, which provides the main channel of ingress and egress to the city's major industrial plant. Erie Boulevard's traffic is among the heaviest of any street traffic in the city. Approximately 71% of the total personnel injury accidents on Erie Boulevard during 1946 occurred after dark.

In May, the old lighting was replaced by 82 General Electric luminaires with clear rippled globes and 15,000-lumen, 3,000-hour, group-replacement, multiple street-lighting lamps. Prior to this, the street was lighted with thirty 6.6-ampere, 13,700-lumen, twin carbon-arc lights, mounted approximately 22 feet above the pavement. These lights were installed in opposite arrangement and spaced about 130 feet apart along each curb. Although this lighting was excellent when installed 23 years ago, it was inadequate for the large volume of traffic today. The new lamps are mounted on 41 twin-light Union Metal standards 30 feet above the pavement, and they are spaced 100 feet apart on each curb. As with the new twin lights along State Street in Albany, our "twins" also are mounted in a plane parallel to the curb line.

With the new lighting, the public is getting the benefit of approximately four times the amount of light for twice as much energy consumed. About 41% of the generated light is utilized in the new lighting system, as compared with 15% in the old installation. The average illumination is 2.14 foot candles, while the former was 0.6 foot candles. The energy consumed by the present system is about 32 watts per linear foot of street, against the 16 watts per linear foot consumed by the old system. There will be only a 5% increase in annual cost to the city.

The City Council has authorized the relighting of 63 city streets, which will involve the installation of 612 new fixtures. It is felt that this well planned and executed lighting program will not only materially reduce the accident hazard, but will also lessen crime and delinquency and make our streets much safer for motorists and pedestrians.



Curtain-raising of the new Erie Boulevard street-lighting installation was the lighting of the world's largest incandescent lamp — 50,000 watts — by means of an electrode from the old system, made radioactive by an atomic energy machine.

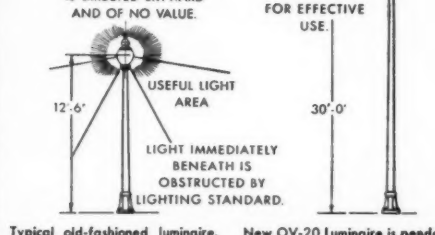
Erie Boulevard has been relighted with 82 luminaires with 15,000-lumen, 3,000-hour, group-replacement multiple street-lighting lamps, mounted 30 feet above the pavement.

WINS APPROVAL IN CITIES THROUGHOUT THE COUNTRY

The new Westinghouse OV-20 leads the way in better street lighting because it directs the light where it belongs . . . on the street.

Through a radically new design, a decided change in optical system, combined with the latest improvement in mounting—this new luminaire gives higher roadway brightness, plus more efficient light control.

You'll want to check the specific advantages of this new luminaire. Why not have one of our lighting engineers plan with you—for better street lighting today. For further information, send for bulletin B-3790-A. See your nearest Westinghouse distributor or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa. J-04152



Typical old-fashioned luminaire. Note the small percent of light that falls within useful area. Over one half is directed upward.

New OV-20 Luminaire is pendant type. Practically all the light is below the horizontal and directed toward the pavement.

New OV-20 Mercury-Vapor Luminaire with ellipsoidal contour

AVAILABLE THROUGH 127 WESTINGHOUSE ELECTRIC SUPPLY OFFICES AND INDEPENDENT DISTRIBUTORS

Street Lighting Costs in Four Big Cities

Given below are the rates and costs paid for the street lighting of four of the 150 cities which have contributed to a street lighting survey to be published in the 1947-48 edition of the *Municipal Index*. With the exception of Philadelphia, which is considering a large-scale relighting project, these are cities which have made important improvements in their lighting. In Los Angeles, notable for accident-reducing experiments with sodium-vapor lights at intersections, 60% of the 80,927 lamps have an output of 4,000 lumens or more. Seventy-six percent of Schenectady's lamps are in the 4,000-lumen-and-up bracket, and well over 50% of Cleveland's lamps are also in this high-lumen bracket. The need for adequate street lighting is being recognized more every day. Its practical necessity can readily be seen from the following matter of records—although night traffic volume is only one quarter as great as daytime, 60% of all fatal accidents occur at night. Recognition of the important relation between visibility and traffic safety was seen in the recent appointment of a street lighting authority to serve on the engineering committee of the Action Program of the President's Highway Safety Conference in Washington, D. C. Twenty states, acting on the suggestion of President Truman following last year's Safety Conference, have given close attention to modern lighting practices. Adequate street lighting would save thousands of lives annually.

Cleveland's Lighting Costs

CLEVELAND'S street lighting costs $1.16 per capita—a total of $1,020,000 annually. The Division of Light and Power, a non-tax supported utility owned by the city, supplies energy and owns the equipment for 18,461 of the lighting units at a charge of $645,000 a year. The remaining 7,814 lamps are furnished and powered by the Cleveland Electric Illuminating Company for $375,000 a year. There are 350 miles of lighted streets.

The city owns and supplies energy for 16 lamps of 25,000 lumens; 6,568 lamps of 10,000 lumens; 5,749 lamps of 6,000 lumens; 4,367 lamps of 2,500 lumens; 775 lamps of 15,000 lumens; and 630 of 4,000 lumens. The cost per lamp per year on wood poles with overhead wiring varies from $16.20 for that of 2,500 lumens to $53.04 for the 15,000-lumen lamp. For those lamps on metal poles with underground wiring, the cost varies from $20.64 for the 2,500-lumen to $86.40 for the 25,000-lumen lamp. In addition to these units, there are 94 multiple, 1,500-watt lamps and 262 multiple 1,000-watt lamps on metal poles with underground wiring. The cost per lamp per year for these is, respectively, $99.00 and $71.04. Rates for private utility lamps are $41.40 for 400-candlepower lamps, and $64.08 for 1,000 candlepower. The average annual rate is $47.99 per unit.

GEORGE C. OXER
Commissioner of Light and Power
Cleveland, Ohio

Schenectady Well Lighted

SCHENECTADY'S 136 miles of lighted streets cost $2.08 per capita, or an annual total of $197,296. The system consists of 3,410 lamps, whose lighting outputs range from 1,000 to 15,000 lumens. Schenectady's streets are well-lighted with 1,490 lamps of 6,000 lumens; 693 of 15,000 lumens; 572 of 2,500 lumens; 355 of 10,000 lumens; 249 of 1,000 lumens, and 51 of 4,000-lumen lamps. Street lighting equipment and energy are supplied by the New York Power and Light Corporation, who base the total charge upon three individual charges:

1. Annual facility charge — This charge is $2.25 per 100 feet for overhead facility on wood poles, and for 13% of the actual installation cost for underground facility.

2. Annual support and fixture charge. —This varies from $5.50 for open-type fixtures to $18.50 for sodium-vapor units. Ornamental types vary from $18 for a Novalux form-8 fixture and 12-foot pole to $56 for form-32 (two per pole and 20-foot twin-light ornamental metal pole).

3. Annual lamp and energy charge—This varies from $9.96 for the 1,000-lumen lamp to $52.92 for the 15,000-lumen one.

ARTHUR BLESSING
Director
Department of Traffic and City Planning, Schenectady, N. Y.

City-Owned Lighting In Los Angles

THE total annual cost for street lighting in 1946 for the City of Los Angeles was $1,750,000, or $1.16 per capita. The system comprises 80,927 lamps, both underground and overhead wiring, and multiple and series circuits. The lamps of the 800 miles of ornamental lighting system are supported by either metal or concrete poles, generally installed at the expense and request of the property owners. Here, underground wiring is used throughout. The overhead system consists of 17,583 lamps on wooden poles, chiefly at street intersections.

Of the total lamps, 35,740 are of 4,000 lumens, 26,180 of 2,500 lumens, 9,326 of 6,000 lumens, 5,034 of 1,000 lumens, 3,769 of 10,000 lumens, and 878 lamps with an output of 15,000 lumens. The unit cost per year of the lamps on wood poles with overhead wiring ranges from $16.68 for the 1,000-lumen lamp to $67.20 for the one of 15,000 lumens. The average ornamental lamp costs per year from $7.32 for one of 1,000 lumens to $51 for the 15,000-lumen lamp.

The Bureau of Power and Light, a municipally owned utility, furnishes current, lamps and glassware replacements, and paints the metal posts. The balance of the maintenance work is done by other city forces. Approximately one-quarter of the cost is paid from city funds, and the balance is assessed against property owners. The overhead lighting system is provided at city expense. All circuits, lamps, and equipment are owned by the Bureau of Power and Light. The annual cost per lamp covers all current, maintenance, operation, and installation costs.

W. E. LAUER
Street Lighting Engineer
Bureau of Street Lighting
Los Angeles, Calif.

Electric and Gas Lamps In Philadelphia

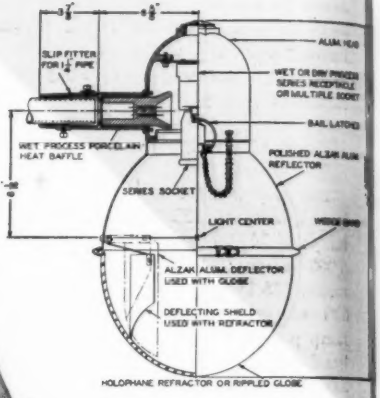
PHILADELPHIA has both electric and gas street lamps. The electric lighting system consists of 34,279 lamps of from 1,000- to 10,000-lumens output. The total annual cost for electric street lighting is $1,309,476, or 68 cents per capita. Of the 23,839 lamps with overhead wiring, 20,610 are of 2,500-lumen output and cost an average of $30 per year. In addition to these, there are 6,089 single lamps and 2,190 twins, fed by conductors; 702 lights wired from city ducts; 87 city-owned units; 1,011 on Roosevelt Boulevard, and 361 along Market Street Elevated. Of these lamps, 7,270 are of 2,500 lumens. The Philadelphia Electric Company supplies the energy and furnishes street lighting equipment, with the exception of city-owned lamps, which are supplied by the city, but maintained by the utility.

The 15,000 gas lamps cost $20.07 each, or a total of $301,000 per year.

F. B. LYSLE
Chief of Bureau
Bureau of Lighting and Gas
Philadelphia, Pa.

JOSLYN

TYPE 95 LUMINAIRE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SERIES SOCKET
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ALZAK ALUM. DEFLECTOR USED WITH GLOBE
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1. **Adjustable slip fitter for 1¼" pipe (with or without heat baffle).**

2. **Series receptacle and multiple socket mounting holes spaced 4⅜" to allow interchangeability.**

3. **Ball latching of reflector to head providing interchangeability with respect to reflectors and reflector-glassware units of various types.**

4. **Aluminum wedge band glassware holder affords positive attachment of Holophane refractors or the new pressed globe which has diffusing ripples on inner surface and smooth easily cleaned outer surface.**

5. **Gasket free coupling of reflector to head and reflector to glassware.**

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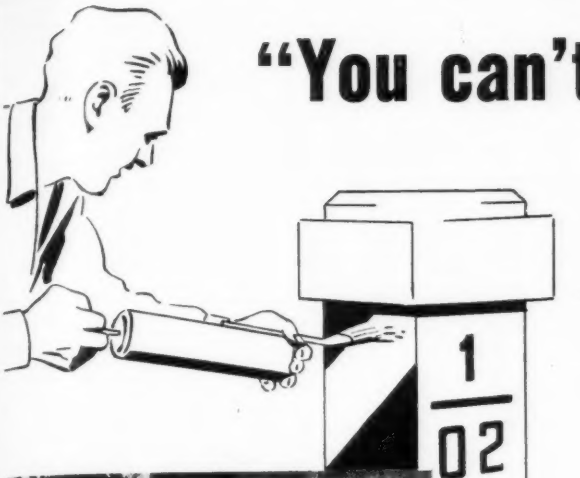

NOW . . . you can reflectorize permanent structures right in the field, with the Prismo Sign Kit! *New* methods of *vertical* markings perfected by Prismo Laboratories open a new field of reflectorization possibilities. Culverts, safety islands, bridge abutments, barricades, underpass headwalls, guard rails, guard posts and numerous other roadside aids can be effectively marked for day and night visibility.

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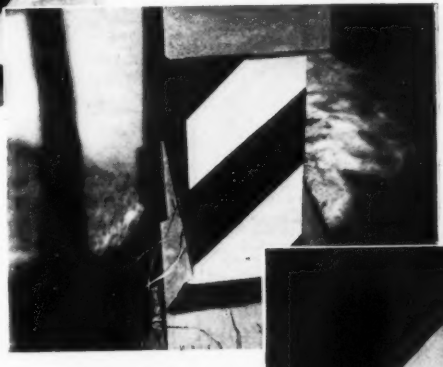

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Municipal and Civic Publications

Measuring the Quality of Housing

AN APPRAISAL METHOD FOR MEASURING THE QUALITY OF HOUSING: A YARDSTICK FOR HEALTH OFFICERS, HOUSING OFFICIALS AND PLANNERS—*Part II, Appraisal of Dwelling Conditions, consisting of three volumes. American Public Health Association, Committee on Hygiene of Housing,* 1790 *Broadway, New York* 19, *N. Y.* 1946. *Three volume set* $5.00. *Vol. A., Survey Director's Manual,* $2.50; *Vol. B., Field Procedures,* $1.00; *Vol. C., Office Procedures,* $2.00.

The material in this detailed and scientific study describes how a dwelling survey appropriate to local needs can be planned and carried out. Assuming that the reader is familiar with Part I, *Nature and Uses of the Method,* the three volumes of Part II are addressed primarily to the person in direct charge of the housing survey undertaking. Parts of the manual, such as Chapter II of Volume A, explain more fully the rating system and the technique involved, including the method of scale-construction and validation, and the reasoning behind such survey items as overcrowding, structural deterioration, and daylight obstruction.

The manual is based on the premise that consulting service will be rendered locally, before active survey operations begin, by a staff member of the Committee on the Hygiene of Housing. Every provision is made in the text, however, for intimate day-by-day supervision by the local director of his staff through all phases of the study, once the consultant departs.

Official and test studies in various cities making use of steps in the appraisal method have proved its value, as well as contributing substantially to final development of the technique.

Those responsible for the preparation of these volumes deserve hearty appreciation for their careful and meticulous endeavors.

Fire Safety Pamphlets

STANDARDS FOR FUR STORAGE, 20 cents; TABLE OF MATERIALS SUBJECT TO SPONTANEOUS HEATING, 25 cents; AIRCRAFT RESCUE AND FIRE FIGHTING, 25 cents; RUBBISH HANDLING AND INCINERATORS, 35 cents—*Pamphlets by committees of the National Fire Protection Association,* 60 *Batterymarch St., Boston* 10, *Mass.* 1947.

The officials of a number of municipal departments will benefit from the study of one or more of these carefully prepared pamphlets having to do with specific aspects of fire control and prevention.

Especially timely and useful is the concise summary pamphlet "Aircraft Rescue and Fire Fighting" which contains suggested standard operating procedures for such work at airports. The procedures are designed to secure maximum utilization of rescue equipment which might be available. Local building officials will find the fur storage standards a valuable guide on construction requirements for such buildings. Persons in charge of municipal warehouses would be wise to check the pamphlet on spontaneous heating, listing some of the more common materials and precautions necessary to avoid fire dangers.

Rent Control, Pros and Cons

RENT CONTROL—*By Margaret Rohrer and Douglas M. Frame. Bureau of Public Administration, University of California, Berkeley, Calif.* 1947. *Mimeo.* 47 *pp.*

A concise review is presented here of major developments in the field of rent control. The report, prepared at the request of California legislators, includes sections on the rent-control provisions of other states, and on the rental income of housing operators.

Pay-As-You-Go Experience

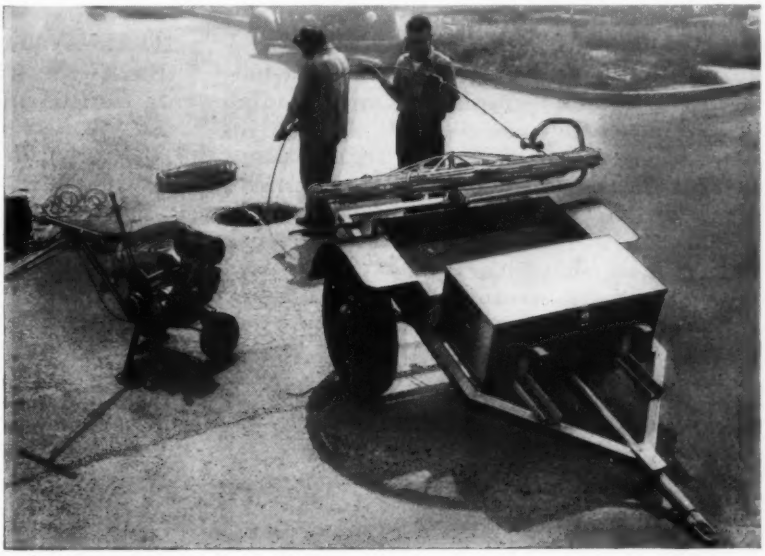
PAY-AS-YOU-GO FOR LOCAL GOVERNMENT—*By Roy E. Brown. July* 1947, *issue of The Tax Review, published by the Tax Foundation,* 30 *Rockefeller Plaza, New York, N. Y.* 4 *pp.*

A concise discussion of municipal experience with pay-as-you-go programs, including a list of questions which should be useful in aiding a community to determine to what extent it should make use of this form of financing.

Sanitation and Diesel Power

MAINTAINING HEALTH AND SANITATION STANDARDS—*Caterpillar Tractor Co., Peoria, Ill.,* 8 *pp.*

A folder describing how diesel equipment made by this manufacturer plays a part in maintaining high standards of health and sanitation in the municipal field. The folder speaks of mosquito control work, refuse disposal, water supply, sewage treatment, pipeline construction, and general power production.



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U.N. Headquarters Report

THE PERMANENT HEADQUARTERS OF THE UNITED NATIONS—*Report to the General Assembly of the United Nations by the Secretary General. Document A/311. Available from the International Documents Service, Columbia University Press, 2960 Broadway, New York 27, N. Y.* 1947. 96 *pp.* $2.50.

This detailed report and analysis of the framework for the future building program of the United Nations headquarters displays a brilliant and imaginative concept of design for a "workshop for peace." Representing the unceasing efforts of Wallace K. Harrison, director of planning for the U.N., and his board of international experts, the report should be of exceptional interest to planners generally because of its emphasis on the fundamental elements of modern urbanism—sunlight, space, and verdure, and its disregard for the tradition of planning city development block by block.

The analysis of the site, and its orientation, the circulation and traffic studies, a glimpse of the elaborate communications system proposed, and the general relation of the headquarters to the City of New York are some of the major features of the report. The multi-colored diagrams serve as excellent examples of visual presentation of complicated studies and proposals.

The report also makes clear the importance of extensive redevelopment of large sections of the New York City midtown area to create an effective setting for the headquarters, as well as to provide more housing for U.N. personnel.

Fringe Planning

SOCIAL ASPECTS TO LAND USE PLANNING IN THE COUNTRY-CITY FRINGE: THE CASE OF FLINT, MICHIGAN—*By Walter Firey, Sections of Sociology and Anthropology. Agricultural Experiment Station, Michigan State College. East Lansing, Mich. Special Bulletin* 339. 1946. 57 *pp.*

An intelligent study of fringe areas around Flint, Mich., which shows the unusual nature of the problems confronting land use planners and administrators in such areas. Unregulated platting and development which boost land values so that agricultural operations are no longer profitable are said to be key factors in the social maladjustments and characteristics which emerge in fringe neighborhoods.

Municipal Bond Dealers

DIRECTORY OF MUNICIPAL BOND DEALERS OF THE UNITED STATES—*Published by The Bond Buyer, 67 Pearl St., New York 4, N. Y.* 1947. 416 *pp.* 50 *cents.*

This pocket-sized directory contains a listing of municipal bond dealers by states and cities, an alphabetical list of municipal bond dealers, and a list of municipal bond attorneys.

How Plans Can Be Carried Out

THE PEOPLE DESIGN THE CITY—*California State Reconstruction and Reemployment Commission, 631 J St., Sacramento 14, Calif.* 1946. 28 *pp.*

This easy-to-read pamphlet uses Santa Rosa, Calif., as an example of how the people of a community can translate community planning ideas into community action. Santa Rosa, with 20,000 population, was chosen because the problems it faced are similar to those faced in many other communities today.

The text of the pamphlet, illustrated with clever cartoons, explains how a sweeping reorganization of the city government was carried through, how citizen interest and support has been stimulated, and how many of the city's services have been expanded and improved.

An important aspect of the publication is its emphasis on the responsibility of planning commission members in promoting public interest and understanding of planning needs and programs.

A Railroad Plan

RAILROADS, A PLAN FOR FACILITATING RAIL FREIGHT MOVEMENTS IN THE CINCINNATI AREA—*By J. B. Sullivan. City Planning Commission, Cincinnati, Ohio.* 1947. 23 *pp.* $1.00.

The study points out that no other element in a metropolitan master plan is more influential in shaping the basic land use pattern than railroads. The plan is concerned particularly with freight traffic problems because of the fact that the Cincinnati Union Terminal has solved passenger traffic requirements so well.

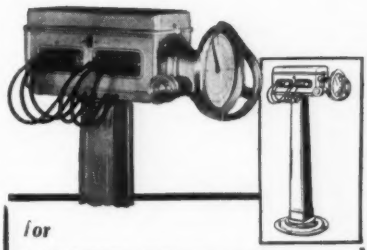
Bettering freight movement operations calls for a much less ambitious program than that which produced the Union Terminal, the report declares, and involves only a small amount of physical modification of the present track pattern. Estimates indicate that demonstrable savings to railroads and the public, from improved operations and from obviating the need of grade crossing elimination projects, would more than balance the cost of the entire improvement proposed by the plan.

Social Security Summarized

RELIEF AND SOCIAL SECURITY, A SUMMARY.—*By Lewis Meriam. The Brookings Institution, Washington, D. C.* 1946. 42 *pp.* 50 *cents.*

This handy-sized report summarizes the 900-page study published in May 1946 by the Brookings Institution.

The present relief and social security programs are described, with conclusions and recommendations presented on how to improve those programs so that they will be more comprehensive and better coordinated.



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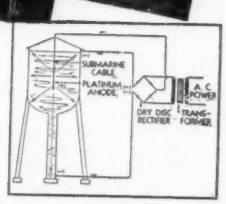

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To Get Homes Built Now

HOMES CAN BE BUILT NOW . . . THROUGH COMMUNITY ACTION—*Community Action Bulletin No. 9, June 1947. Office of the Housing Expediter, Community Action Advisory Service, Washington 25, D. C. 44 pp.*

Suggestions and examples of effective community action for the promotion of home construction, and 75 illustrations of successful measures undertaken by voluntary cooperation among private citizens in 63 communities, are contained in this pamphlet.

Although citing several cities in which mayors' emergency housing committees have produced successful results through coordinated local action, the pamphlet points out a number of other methods through which more housing can be achieved and costs can be lowered.

The use of idle tax-delinquent land, municipal construction, nonprofit corporations, cooperative building, conversions of existing buildings, referral centers, labor union assistance and zoning ordinance amendments are among the devices described which have been found helpful in municipalities concerned with the housing shortage.

Detroit Land Use Plan

PROPOSED GENERALIZED LAND USE PLAN—*Detroit City Plan Commission, 901 Griswold Bldg., Detroit 26, Mich. 1947. 72 pp.*

This is an outstanding job of presentation and explanation of the proposed land-use plan for Detroit and the background material which went into its preparation. The attractively printed pamphlet is divided into three sections: Part I briefly traces Detroit's growth and why planning is needed; Part II describes the elements of the plan and the proposed community pattern and structure. Part III, entitled "More About the Plan," contains further information and facts underlying the reasons for its proposals. A large multi-colored map of the entire generalized plan is included.

Another device, which other city reports should use more often, is a postcard attached to the booklet for the convenience of Detroit citizens in sending in their comments and opinions about the changes in land use advanced by the plan.

Town and Community Planning

COMMUNITY PLANNING ISSUE—HORIZONS. *A Quarterly Magazine, June 1947. Vol. 20, No. 1. Landscape Architecture Department, Iowa State College, Ames, Iowa. 75 pp. Subscription, $2.00 for one year.*

The first issue since the war of this quarterly published by the students of the Department of Landscape Architecture, Iowa State College, contains several of the speeches delivered at the annual Town and Community Planning Institute and Short Course, sponsored jointly by the College and the Iowa League of Municipalities in April of this year.

The articles include "Metropolitan Government" by Kenneth P. Vinsel, "Planning Pays Civic Annuities" by J. Franklin Bonner, "The Citizen Approaches Planning" by Robert O. Thomas, "Legal and Administrative Aspects of Urban Highway Problems" by David R. Levin, "Beyond the City—An Analysis of County Zoning Problems" by Fred Robinson, and "State Laws for Subdivision Plats" by J. M. Albers.

Virginia City Finances

A REPORT OF THE FINANCIAL PROBLEMS OF VIRGINIA CITIES AND TOWNS AND THE NEED FOR NEW SOURCES OF MUNICIPAL REVENUE—*By a Special Committee of the League of Virginia Municipalities on New Sources of Municipal Revenue. 902 Travelers Bldg., Richmond 19, Va. Report No. 303. 1947. Mimeo. 20 pp.*

The report points out existing inequities in Virginia between state and municipal taxation sources and revenue policies. It recommends greater local taxing powers as an aid toward alleviating increasing municipal fiscal burdens.

Two Bulletins On State Parking Legislation

AN ANALYSIS OF GENERAL STATE ENABLING LEGISLATION DEALING WITH AUTOMOBILE PARKING FACILITIES, AND AN ANALYSIS OF STATE ENABLING LEGISLATION OF SPECIAL AND LOCAL CHARACTER DEALING WITH AUTOMOBILE PARKING FACILITIES—*Bulletins No. 2 and 7, reported by David R. Levin. Published by Highway Research Board, Division of Engineering and Industrial Research, National Research Council, Washington 25, D. C. 1947. Bulletin No. 2, 104 pp., 50 cents. Bulletin No. 7, 31 pp., 38 cents.*

The revised edition of Bulletin No. 2 contains major changes in the appendices on model legislation for parking. Bulletin No. 7 includes state enabling legislation of a special and local character which is applicable only to specific places or special projects. The research which has gone into the preparation of the tables in both bulletins should be well repaid by the revelation of serious defects in many state statutes pertaining to local parking problems.

Thirty-two state laws dealing with parking facilities are analyzed in Bulletin No. 7.

Cleveland Housing

HOUSING IN THE CLEVELAND COMMUNITY: PAST, PRESENT, FUTURE—*Howard Whipple Green, Real Property Inventory of Metropolitan Cleveland, 1001 Huron Rd., Cleveland 15, Ohio. 1947. 25 pp. Charts. $5.00.*

Two major points are made in this excellent compilation, decade by decade since 1800, of information about housing in Cleveland. The first is that the constant decrease in the number of persons per family is a most important factor in the present housing shortage problem. The second point is that the effect of aging buildings and the huge market for replacement housing have probably been underestimated in most mature metropolitan communities throughout the country.

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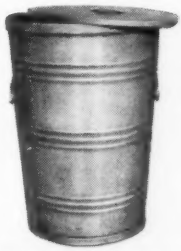

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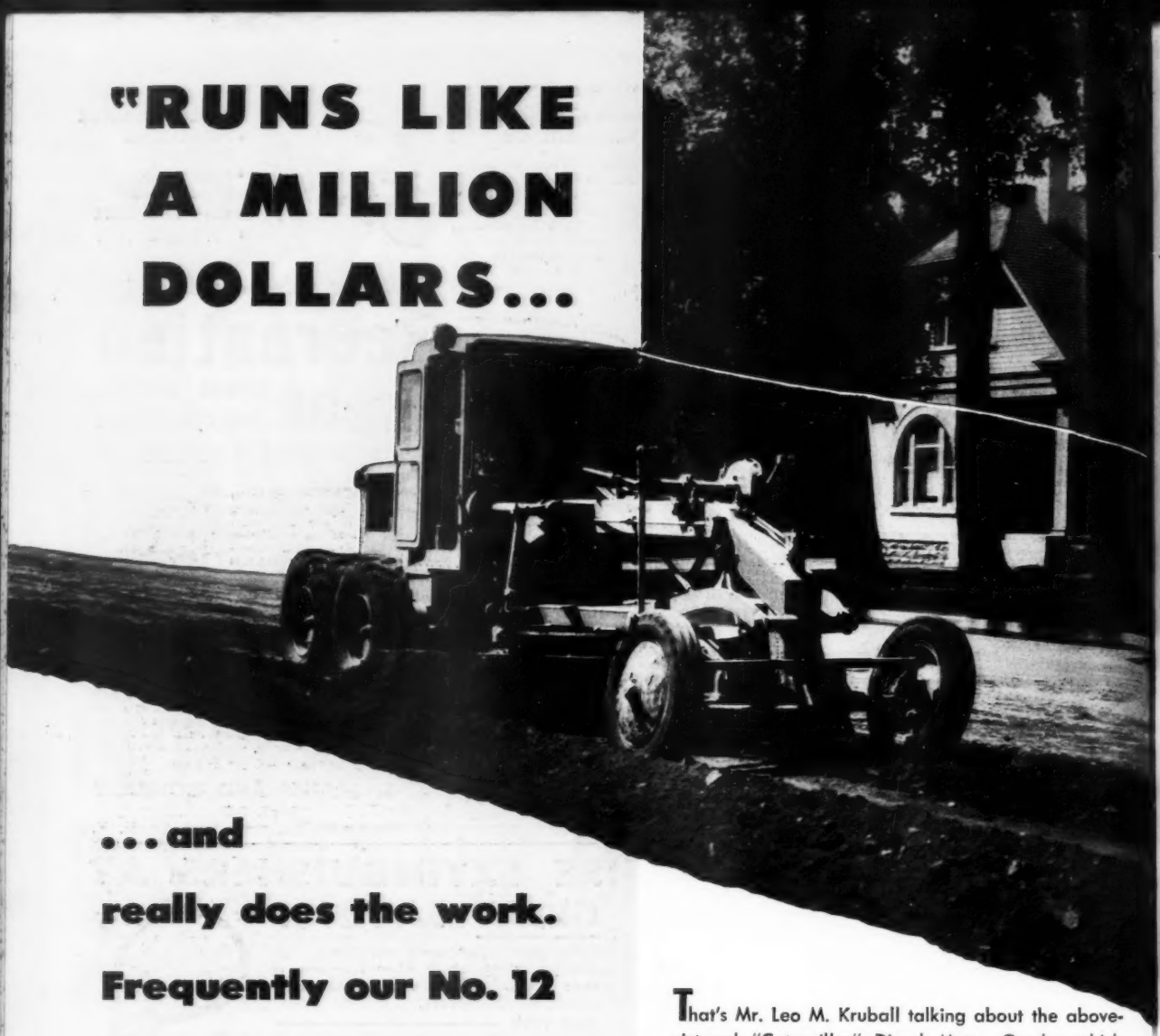

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Tax Delinquency Trends

TREND OF TAX DELINQUENCY, 1930-1946, CITIES OF OVER 50,000 POPULATION—*By Frederick L. Bird. Municipal Service Department, Dun & Bradstreet, Inc., 290 Broadway, New York 8, N. Y.* 1947. 39 *pp.*

An annual compilation, which was initiated in 1932, this survey shows that wartime and post-war prosperity has reduced property tax delinquency so nearly to the vanishing point that it has become, for the time being at least, a very minor item in the financial problems of most cities. The report declares, "Last year, for the thirteenth consecutive year, the average American city bettered its collection record, closing the year with a slightly lower percentage of delinquency on its current tax levy than in 1945 and making further progress in reducing the small remaining accumulation of arrears."

The report states, however, that a review of the tax delinquency situation is still important because of the fact that in the past, property tax collections have been sensitive to the business cycle.

From a median percentage of delinquency of 26.35 in 1933 for 150 cities over 50,000 population, the median ratio has declined to 3.20 percent. Among the cities with notably low tax delinquency for 1946 are Birmingham, Ala., and Racine, Wis., with 0.1 percent and Lancaster, Pa., with 0.2 percent.

The four tables included at the rear of the report show the tax delinquency and collection trends for the individual cities since 1930.

Community Development

YOUR HOME TOWN'S FUTURE, A MANUAL FOR COMMUNITY DEVELOPMENT—*Division of Economic Development, N. Y., Department of Commerce, 112 State St., Albany 7, N. Y.* 1947. 32 *pp.*

Designed to aid municipal officials, planning commissions, chambers of commerce, and community committees in their efforts toward economic expansion, this manual explains in a non-technical manner the various procedures involved in planning industrial and community growth. Practical methods are set forth for objective self-analysis of communities to determine the type of expansion best adapted to round out their economic requirements.

The manual lists the state's services to communities, including the gathering of statistics, technical advice, and consultation available through the main and regional offices of the Department of Commerce. Main emphasis in the pamphlet, however, is on the preparation and carrying out of a community survey to cover natural, industrial, and human resources, as well as community services and facilities, and trade and service.

Slum Clearance Plan

OVERALL PLAN FOR REDEMPTION OF SLUM AREAS—*Charles C. Platt, Architect, 101 Park Ave., New York 17, N. Y. Mimeo.* 1947. 4 *pp. Copies available free upon request.*

This proposal by a well known architect for many low-rent housing projects in New York City, calls for the installation of park and play spaces in slum areas as the first step towards their redemption.

The author would first divide slum areas into units of nine blocks each, and he would assign, in each such area, a specific site for clearance for parks and play spaces sufficient for the nine-block neighborhood. The next step would be to build new buildings on vacant land as close to the slum areas as possible to accommodate the tenants to be removed for the proposed parks and playgrounds.

When these new buildings are completed the tenants to be displaced will be moved into them. The parks and playgrounds in the nine-block units, including the closing of streets and reclamation of vacant lots, would then be installed as a major factor in providing light and air and improving the whole neighborhood. The author suggests a pilot project, on a nine block basis to be undertaken by the City Housing Authority.

Residential Area Study

RESIDENTIAL AREAS, AN ANALYSIS OF LAND REQUIREMENTS FOR RESIDENTIAL DEVELOPMENT, 1945 *to* 1970 — *City Planning Commission, Cincinnati, Ohio.* 1946. 136 *pp.* $1.00.

The report is notable for the fact that its contents cover the entire Cincinnati metropolitan area, rather than being confined solely to the city's boundaries. To bring an adequate program of residential development to a head, the report recommends the establishment of a permanent organization, equipped with adequate staff and powers to do three things for the metropolitan area:

1. Carry on continuous inquiry into housing market conditions and make its findings available periodically to the public.

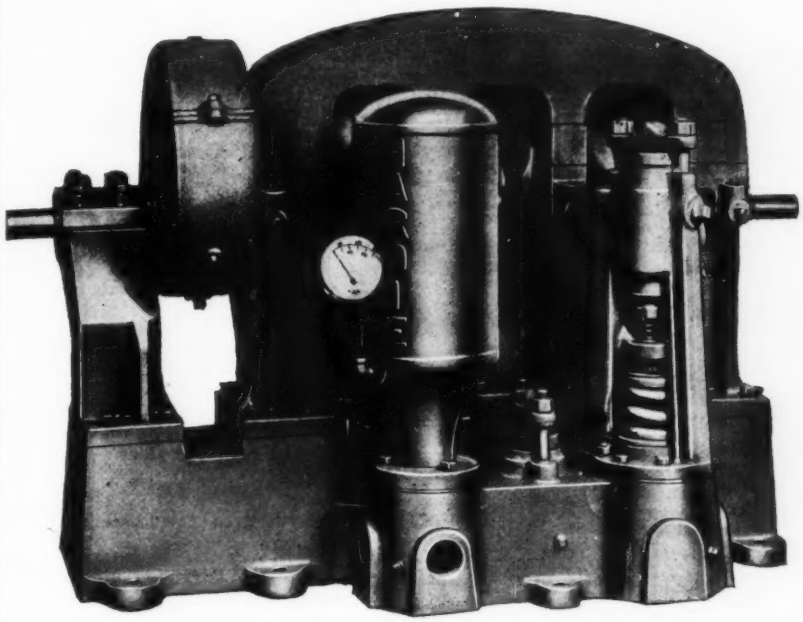
2. Work with all persons, organizations, and agencies in the field of housing in order that the sum total of housing activities be as nearly consistent as possible with the general program, both in volume and in character with the program.

3. Serve as the central point of contact among the local governments and the various State and Federal agencies in housing and related fields.

Chambers of Commerce List

LIST OF CHAMBERS OF COMMERCE IN THE UNITED STATES IN ALL CITIES OF 5,000 POPULATION AND OVER—*Chamber of Commerce of the State of New York, 65 Liberty St., New York 5, N. Y.* 1947. 51 *pp. Single copies available to interested organizations upon request.*

State and city chamber of commerce organizations are listed in this useful compilation, together with the names of managers or secretaries. U. S. census population figures are used as the basis for inclusion of a local chamber in the pamphlet.



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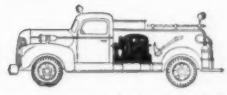

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Land Acquisition Bibliography

BIBLIOGRAPHY ON LAND ACQUISITION FOR PUBLIC ROADS—*Public Roads Administration, Washington, D. C.* 1947. 18 *pp.*

The bibliography, prepared for the use of persons engaged in the acquisition of rights-of-way for streets and highways—federal, state, and local—includes most of the pertinent material published within the last twenty years. The arrangement of the material is chronological, under broad subject headings. It is pointed out that although many of the references included do not apply directly to the acquisition of land for roads and streets, the land acquisition problems of all public agencies are often similar, and the solutions and techniques used may have meaning in more than one situation.

Fiscal Facts For New York City

FISCAL FACTS CONCERNING THE CITY OF NEW YORK—*Citizens Budget Commission, Inc.*, 51 *East 42nd St., New York 17, N. Y. Vol. II.* 1947. 108 *pp.* $2.00 *per copy in paper cover;* $3.00, *full cloth cover.*

This useful statistical summary of all salient facts about the city's finances is designed to bring up to date a prior volume covering a 20-year period published in 1940, as well as to make changes in the forms of fiscal reporting necessitated by the 1938 New York City Charter and a revised State Constitution.

The tables take up where the first volume left off, and the data are complete up to and including the fiscal year 1946-47. One interesting and well-thought-out feature of the volume, which adds greatly to its value, is that blank lines have been provided for the insertion of data covering subsequent years up to 1963-64 so that ultimately the volume will provide data for 25 years. Supplements are to be published annually, from which data can be transcribed to the blank lines provided.

Planning and Housing Reports

CHICAGO, ILL.—Facts about Public Housing in Chicago. Chicago Housing Authority. 1947. Illus. 30 pp.

LONG BEACH, CALIF.—Planning Progress. 1944-1946. The City Planning Commission, 209 City Hall, Long Beach 2, Calif. Illus. Mimeo. 20 pp.

PROVIDENCE, R. I.—Twelfth Annual Report of the State Planning Board. 1946. Robert F. Shepard, Chairman. Illus. 39 pp.

Other Reports Received

AUGUSTA, GA.—Year Book of the City Council. 1946. Illus. 82. pp.

DUBUQUE, IOWA—The Forty-Seventh Annual Report of the Water Department. 1947. Illus. 64 pp.

HOUSTON, TEXAS—Houston Port Book. Vol. 25, No. 1. 1947. Fifth Floor Civil Courts Bldg. Illus. 60 pp.

LOS ANGELES, CALIF.—Organization, Administration, and Management of Administrative Service of the City of Los Angeles. Part VI —Summary Report. 1947. Bureau of Budget and Efficiency, 120 City Hall. Mimeo. 25 pp.

LYNCHBURG, VA.—Annual Report of the City of Lynchburg. 1946. Clarence G. Burton, Mayor. Charts. 62 pp.

NEW ROCHELLE, N. Y.—Auditor's Annual Report, 1946. Illus. Tables. 138 pp.

NEW ULM, MINN.—Financial Statement of the City of New Ulm. 1947. Tables. 28 pp.

NEW YORK, N. Y.—Department of Health Quarterly Bulletin. Vol. XV, No. 2.—Israel Weinstein, M.D., Commissioner. Charts. 15 pp.

NEW YORK, N. Y.—Sixty-sixth Annual Report of the State Department of Health. Edward S. Godfrey, Jr., Commissioner. Vol. 1. 1945. 281 pp.

PORTSMOUTH, VA.—Annual Report of Portsmouth Water Department, 1945. 925-1019 Godwin St. Illus. 23 pp.

PHOENIX, ARIZ.—Airport Master Plan for the Phoenix Metropolitan Region. City Planning Commission, Glenn Taylor, Chairman. Mimeo. Charts. Maps. 40 pp.

—Population Study and Forecast. 1947. City Planning Commission. Mimeo. Charts. 8 pp.

RACINE, WIS.—Sewage Disposal Plant and System. 1946. Superintendent Thomas T. Hay, 21st St. and Grand Ave. Mimeo. Charts. 14 pp.

SEATTLE, WASH.—City Engineer's Annual Report. 1946. C. L. Wartelle, City Engineer. Mimeo. Charts. Tables.

WESTMOUNT, QUEBEC, CANADA—Annual Report. 1946. An Account of Department Activities, Cost, and Operation of Municipal Services. Illus. 50 pp.

WINCHESTER, MASS.—Report of the Winchester Water and Sewer Board. 1946. Edmund C. Sanderson, Chairman. Tables. 7 pp.

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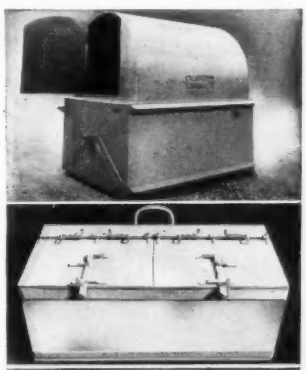

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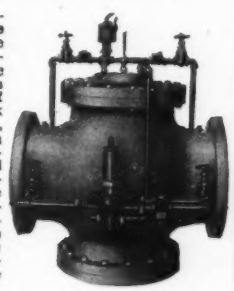

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News and Illustrations

Items of interest to city, town and county officials and others concerned with the economical construction and efficient operation of public improvement undertakings

New Signal Controllers

The Lighting Division of the General Electric Co., Schenectady, N. Y., has announced that a new line of traffic signal controllers, now in production, will supersede the Type D line. A compact plug-and-socket type connector has replaced the jackboard at the bottom of the timer, providing greater ease in handling as well as mechanically shielding all electric contacts. A new Telechron motor, substituted for the old one, utilizes high-temperature oil in a sealed gear case, reducing the necessity for constant lubrication. An indexed motor plate with time cycle markings assures accurate motor pinion and time cycle mesh at all times.

Mathieson Adds to Staff

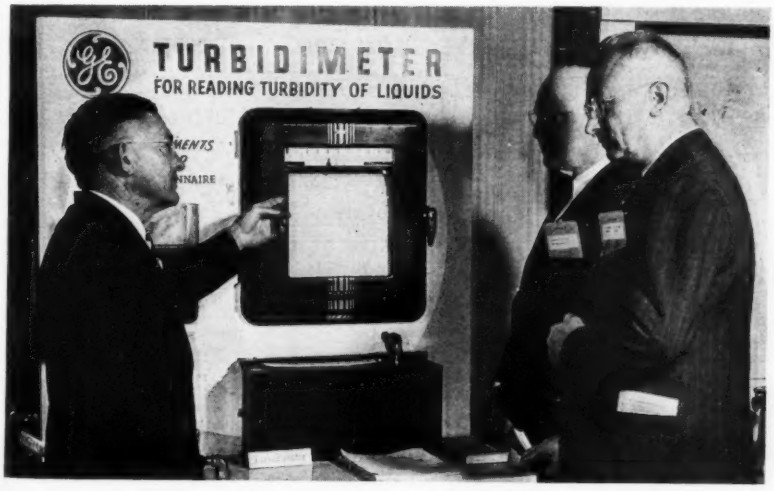
The Mathieson Alkali Works, Inc., 60 East 42nd St., New York 17, N. Y., has added J. A. Heineck and James G. Johns as Specialties Sales Representatives. Mr. Heineck will cover Indiana, eastern Michigan and the Chicago area. Mr. Johns will cover northern New Jersey and Pennsylvania, southern New York, and western Connecticut. They will handle sanitation chemicals, bleach, and special detergents.

A 3-ton Towmotor moving a load of pipe at the Port of Oakland's Grove Street Terminal.

Towmotors at Port of Oakland, Calif., Make Freight Handling Easy

Now in operation on the docks and terminals of the Port of Oakland, Oakland, Calif., are 3 Towmotors, facilitating the handling of heavy freight. Manufactured by the Towmotor Corp., 1235 E. 152nd St., Cleveland, Ohio, one 2-ton and two 3-ton machines are utilized for loading freight cars and trucks, and for other heavy lift work.

Electrical Indicator Records Pollution at Predetermined Level



The General Electric Turbidimeter shown in the background is a device which electrically indicates and records pollution or contamination of water and sewage at a predetermined level. GE's Turbidimeter made its debut at the recent San Francisco Water and Sewage Works conventions. Left to right: Vance Crawford, General Electric Co., design engineer in the Industrial Division of the Apparatus Dept., Schenectady, N. Y.; Francis S. Friel, President of the Federation of Sewage Works Associations and member of the firm of Albright & Friel, Inc., consulting engineers of Philadelphia, Pa.; Wendell R. LaDue, President of the American Water Works Association and Chief Engineer and Superintendent, Bureau of Water & Sewage, Akron, Ohio.

INERTOL

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The article appearing on pages 94-95 of this issue of THE AMERICAN CITY states how Mr. L. S. Duckworth, Superintendent of Water Works, Lancaster, Pa., used an Inertol enamel to beautify his filter plant.

The filter room—whose walls and ceiling are painted with RAMUC Enamel—looks like an art gallery. And the plant is popular: the many visitors, including thousands of Lancaster's citizens yearly, pay Mr. Duckworth the highest compliments.

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for your city

Why take chances with parking meter receipts when it is next to impossible to pry a single penny from Mark Time lock-box collection system? Even the money in the coin window automatically drops into the sealed lock box when the meter is opened. The finest collection system is another reason why Mark Time is far ahead in every way. Mark Time installation engineers will gladly make the metered parking survey in your city in cooperation with your own traffic officials, and submit complete recommendations without any obligation to you.

COLLECT 100% PARKING METER RECEIPTS WITH PERFECTION THEFT-PROOF LOCK BOX

1. Mark Time *lock-box* — type proven best by world's largest coin collector.

2. Lock-box easily accessible when burglar proof bank door is opened.

3. Collector inserts new empty box with other hand and collection is finished in a few seconds.

4. Many cities use motorcycle side cars, such as above, for collections.

5. Back at headquarters boxes are emptied and resealed—ready for use on next collection.

MARK TIME *Perfection*

the most perfect parking meter for your city

M. H. RHODES, INC., HARTFORD 6, CONNECTICUT

FWD records its "first picture" of the famous flying saucers.

Those Flying Saucers

Probably as official as any other report is this shot showing four "flying saucers" in tight formation sailing above an FWD truck transporting a power shovel over the Montana highways. FWD's travelling reporter, Nick Golueke, took the picture.

There have been no repercussions from Washington as yet, and Justin M. Schmiedeke, a member of the advertising department of the Four Wheel Drive Auto Co., Clintonville, Wis., reports that Nick has been advised to wipe the perspiration off his lenses.

R-S Products Name Hopkins Vice-President

Davis W. Hopkins has been promoted to the position of Executive Vice-president of R-S Products Corp., Philadelphia, Pa., manufacturing engineers. His new position places him in full administrative authority of the Valve, Furnace, and Manufacturing Divisions.

Mr. Hopkins has had experience in processing and mechanical engineering, serving as consulting engineer and Vice-president of V. E. Montgomery Co., Cincinnati, Ohio.

J. Carroll Kennedy Dies

J. Carroll Kennedy, Vice-president of The Kennedy Valve Mfg. Co., Elmira, N. Y., recently died following an operation.

One of the sons of the founder of The Kennedy Valve Mfg. Co., Mr. Kennedy had been Vice-president in charge of manufacturing since 1927. He served as chairman of several committees of the Manufacturers' Standardization Society and the American Society of Mechanical Engineers.

Pittsburgh Imo Meters Again in Production

Volume production has again been attained in the manufacture of the Imo Meter, a rotary, screw-propulsion-type meter, by the Pittsburgh Equitable Meter Div., Rockwell Mfg. Co., 400 North Lexington Ave., Pittsburgh 8, Pa.

Shelved during the war and reconversion periods due to the company's inability to secure the materials needed for its construction, the Type 2 Imo model is claimed to have two distinct advantages over the model produced previous to the war: larger measuring chamber to provide increased capacity, and rotors of larger diameter to provide greater driving power at slower operating speeds.

U. S. Pipe and Foundry Personnel Changes

The following appointments have been made by the United States Pipe and Foundry Co., Burlington, N. J.:

A. Raymond Hausmann, Pacific Coast Sales Manager; P. King Farrington, Assistant Pacific Coast Sales Manager; Carl N. Brown, Western Sales Manager; J. Leslie Hart, Assistant Western Sales Manager; Thomas W. McCreery, Southern Sales Manager; Robert C. Lemert, Assistant Southern Sales Manager.

Fricker Joins Advertising Staff at Heil

Don E. Fricker has been appointed assistant advertising manager of The Heil Co., Milwaukee 1, Wis.

Mr. Fricker was associated with the Le Roi Co. of Milwaukee before serving in the army. During service with the armed forces, Mr. Fricker handled publicity for G.I. shows in Italy.

CIRCUL-AIR
FIRE HOSE DRYER

WRITE FOR BOOKLET

Illustrates how Circul-Air saves hose, shortens drying time, prevents mildew and rot, air conditions as it dries, improves station design.

THE CIRCUL-AIR CORPORATION
575 E. Milwaukee Street
DETROIT 2 MICHIGAN

4 REASONS why GLOBE GEOPHONE* is Best for locating leaks!

*Registered in U. S. Patent Office

1. The Globe Geophone locates underground steam or water leaks without any digging.
2. The super-sensitivity of the Globe Geophone (it operates on the seismograph principle) can be relied on even when 50 to 75 ft. from a leak.
3. The Globe Geophone is the most reliable instrument ever devised for detecting underground leaks.
4. The economical Globe Geophone has no clumsy parts. Packed in handy carrying case, it is ideal for routine check-ups as well as emergencies.

The Geophone consists of two discs, tubes and headpiece. Outfit packed in leather covered carrying case. Handy shoulder strap.

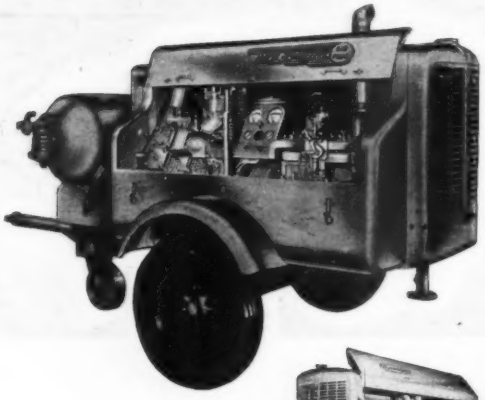
$75

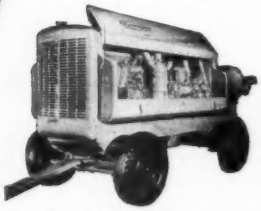
Pipe Finders $100
Dipping Needles $18.50
Pipe Phones $3.70

Globe Phone Mfg. Corp.
(*Manufacturers of Geophones Since* 1918)
READING, MASS., DEPT. Y
Please send me further information on items checked below:
☐ Geophone ☐ Pipe Finders
☐ Pipe Phones ☐ Dipping Needles
NAME .....
FIRM .....
ADDRESS .....

YOU LOSE MONEY RENTING WORN-OUT OLD COMPRESSORS

BUY or RENT an efficient NEW JAEGER "AIR PLUS" for your next job





Any size machine you need —FOR RENT BY HOUR, DAY, WEEK OR MONTH— a money-saving deal for you!

HERE'S OUR PROPOSITION:

Cut your gas and oil expense as much as 25%.

Put more air behind your tools — a steady, heavy wallop, no waiting for air — get more work done for wages paid.

Get cool, clean, dry air — Jaeger's 100% efficient intercooling, automatic drainage, tight rings and carbon-free valves protect your tools from heat, oil fouling and corrosive moisture.

Insure your job against compressor breakdowns.

It costs no more to rent a sweet-running new Jaeger than an old fuel-burner. We also have the Tools, Hose, Bits, etc. you may need.

Call your nearest Jaeger "Air Station"

THE JAEGER MACHINE CO.

Main Office and Factory—Columbus 16, Ohio

REGIONAL OFFICES

8 E. 48th St. New York 17, N. Y. — 226 N. LaSalle St. Chicago 1, Ill. — 235-38 Martin Bldg. Birmingham 1, Ala.

AIR COMPRESSORS, MIXERS, PUMPS, HOISTS, PAVING MACHINERY, TRUCK MIXERS—Distributors in 128 Cities

WORTHINGTON-GAMON

LIQUID METERS

All Sizes All Types

Worthington-Gamon Meter Co.

Subsidiary

WORTHINGTON PUMP & MACHINERY CORP.

296 South Street Newark 5, New Jersey

HAND

STORAGE BATTERIES

FOR MUNICIPALITIES

HAND storage batteries are heavy-duty batteries provided with heavy, hand-pasted tank-formed plates, heavy glass mats, acid and heat resisting micro-porous rubber separators, splash decks and genuine hard rubber containers. Built for use in Police Radio cars, Sanitation trucks, snow plows, sweepers, emergency trucks, ambulances, and fire apparatus.

The Hand Laboratory, Nyack, N. Y.

Diesel Company Notes Golden Anniversary

A. G. Schoonmaker Co., Inc., New York, N. Y., will celebrate its Golden Anniversary next year. Established in 1898 by the late A. G. Schoonmaker, Sr., on the eve of the development of the diesel engine, this company furnished all types of power machinery needed in this fast-growing country of the early 1900's. Realizing the increasing value of the diesel engine, the Schoonmaker Company, in 1921, started its rise to prominence in the diesel-power field. Beginning with a few small diesel engines in 1921, the company now offers from stock a complete selection of engines, generators, and accessory equipment. Sales for the past year approximated 130,000 hp.

The work frequently requires remanufacturing of the engines. For this purpose the company operates home shops in Jersey City, N. J., and conducts field operations with complete shop facilities at Baltimore, Los Angeles, and New Orleans. The engineering department coordinates the various manufacturing and installation operations to provide all power users with complete diesel generating plants which carry "full coverage" written guarantees. Recent municipal installations include Sturgis, Mich.; Orillia, Ontario, Can.; Plattsburg, N. Y.; Idaho Falls, Idaho; Sheboygan, Mich.; Medillen, Colo.; Tocopilla, Chile; Tuceman, Argentina. Information of service given and power units immediately available will be sent on request by A. G. Schoonmaker Co., Inc., New York 7, N. Y.

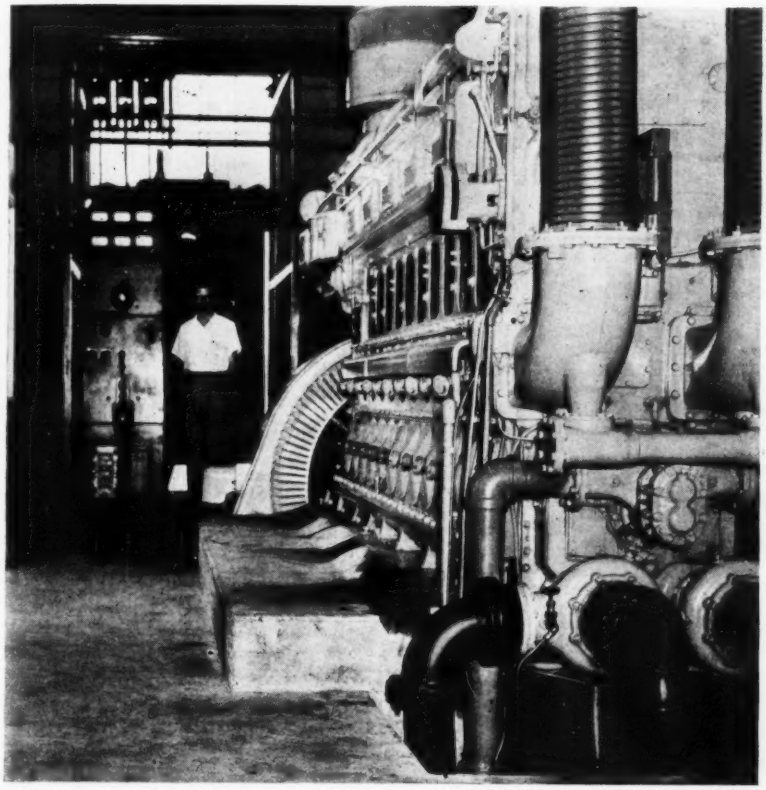
Pittsburgh Plate Promotes Galliher

In order to correlate the sales activities of the Columbia Chemical Division of Pittsburgh Plate Glass Co., Fifth Ave. at Bellafield, Pittsburgh 13, Pa., with the Southern Alkali Corp., a subsidiary of Pittsburgh Plate Glass, W. I. Galliher has been appointed executive sales manager of both units.

W. I. Galliher

Mr. Galliher has been associated with Columbia Chemical since 1931, serving as director of sales for the Division's heavy industrial chemical products, and as executive sales manager since 1943.

Southern Alkali Corp. maintains sales branches in New York City, Dallas, Houston, and Corpus Christi.



The Schoonmaker diesel-power installation at the municipal plant of Orillia, Ontario, Canada.

For PARKS, SCHOOLS, GOLF COURSES, AND PLAYGROUND OPERATIONS

get the Facts on the

NEW AMAZING

modern

LAWN MOWER SHARPENER

For the first time in history, the Modern Lawn Mower Sharpener will sharpen all types of mowers . . . hand, power, gang or fairway unit . . . in from 10 to 20 minutes. From 5-inch edgers to 36-inch power mowers. Dismantling is eliminated. Handle, wheels, roller or motor remain in position when sharpening even the most complicated mower. The Modern Lawn Mower Sharpener eliminates all hand filing. It precision grinds to the extreme ends of both left or right reel blades on any type of mower. Bottom knife is held in same brackets for sharpening. No extra attachments required for grinding.

modern

LAWN MOWER SHARPENER

1 Lowers Capital Investment and Reduces Maintenance Equipment Overhead . . . the same unit sharpens all types of mowers . . . hand, power, gang or tractor.

2 Increases Productivity . . . Speeds all sharpening operations . . . Eliminates Hand Filing and dismantling time . . . Automatically precision grinds to 1/1000 inch.

Send for FREE Descriptive Bulletin 25A

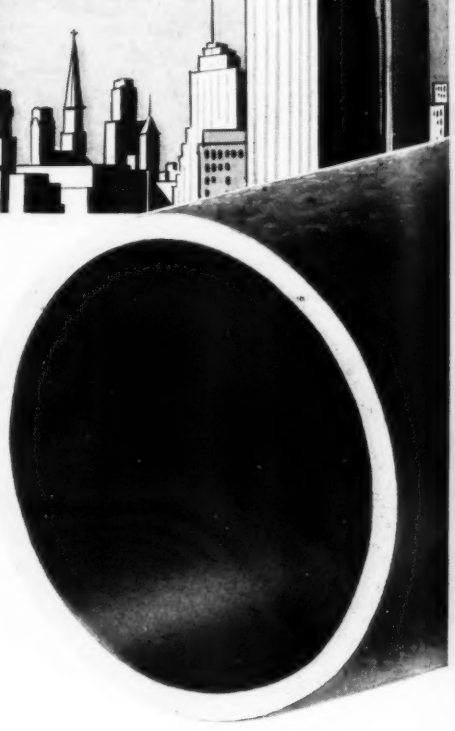
modern

MANUFACTURING CO.

160 N. Fair Oaks Ave., Pasadena 1, Calif.

from WATER MAINS
RECONDITIONED by

PITTSBURGH
ERIC
PROCESS



A combined pipe cleaning and lining service that removes tuberculation and deposit, and applies a corrosion resistant bitumen lining to pipe interiors. New mains, as well as old, can be protected against the action of soft and aggressive waters by a Pittsburgh-Eric Pipe Reconditioning Program. Learn how you can protect the equity in your water main investment by calling our nearest office TODAY!

FOR
WATER MAINS
3" to 24"
INSIDE DIAMETER

PITTSBURGH PIPE CLEANER COMPANY
133 Dahlem St., Pittsburgh 6, Pa.
PHILADELPHIA · BALTIMORE · WASHINGTON · NEW YORK · BUFFALO · CHICAGO · CINCINNATI · ST. LOUIS · DETROIT · BOSTON

Enterprise Acquires Hendy Diesels

The Enterprise Engine & Foundry Co., San Francisco, Calif., has taken over the manufacturing of the complete line of Hendy marine and stationary diesel engines formerly produced by the Joshua Hendy Iron Works of Sunnyvale, Calif.

Supplementing its extensive line of Enterprise Diesels, the Hendy line of engines will enable Enterprise, a subsidiary of Transamerica Corp., to expand its manufacturing and sales activities into broader fields. There will be no interruption of sales, manufacture, or servicing.

Enterprise recently appointed C. G. Smith manager of its New York office at 44 Wall St., New York City. For the past six years, Mr. Smith has been chief marine engineer for the Consolidated Steel Corporation plants at Los Angeles, Wilmington, and Long Beach, where he was in complete charge of the engineering design and production of several hundred ships.

Boyd Heads Galion Sales

C. F. Boyd was elected Vice-president in charge of sales of The Galion Iron Works & Mfg. Co., Galion, Ohio.

C. F. Boyd

Other officers recently elected at the company's annual meeting are: George D. Finney, Sales Manager in charge of the Southern and Western division of Galion; Robert C. Monnett, Sales Manager in charge of the Eastern and Central division; R. W. Gillespie, Chairman of the Board; R. E. Boyd, President; J. L. Connors, Vice-president and General Manager; J. S. Boyd, Vice-president; A. S. Ritzhaupt, Secretary; G. A. Ulmer, Assistant Secretary; I. S. Horowitz, Treasurer.

New Engineering Firm

James J. Walsh and George H. Jennings have formed the firm of Walsh, Jennings and Associates, Consulting Engineers, with offices at 112 Market St., San Francisco, Calif.

Mr. Walsh, a civil engineer, has been engaged in San Francisco on harbor improvements, port and terminal development, investigations, and reports for municipal and industrial improvements.

Mr. Jennings, who is a structural engineer, has been active in the design and construction of streets, bridges, and various types of buildings.

Their associates include Fred Barss, architect, Charles Von Bergen, electrical engineer, and Alfred Charles, mechanical engineer.

Bucket unloads in less than a minute under fingertip control.

Automatic, hydraulic-operated packer plate packs 20 yds. in a 10-yd. body.

Tapered body construction assures speedy discharge regardless of compression.

This new HEIL
COLECTO-PAK
Municipal Refuse Disposal Body

gives you

★ Low loading height
★ Double capacity
★ Complete enclosure
★ Easy maintenance

The all-enclosed, water-tight Heil Colecto-Pak is the answer to your search for a modern method of speeding-up, simplifying, and improving garbage collection and disposal.

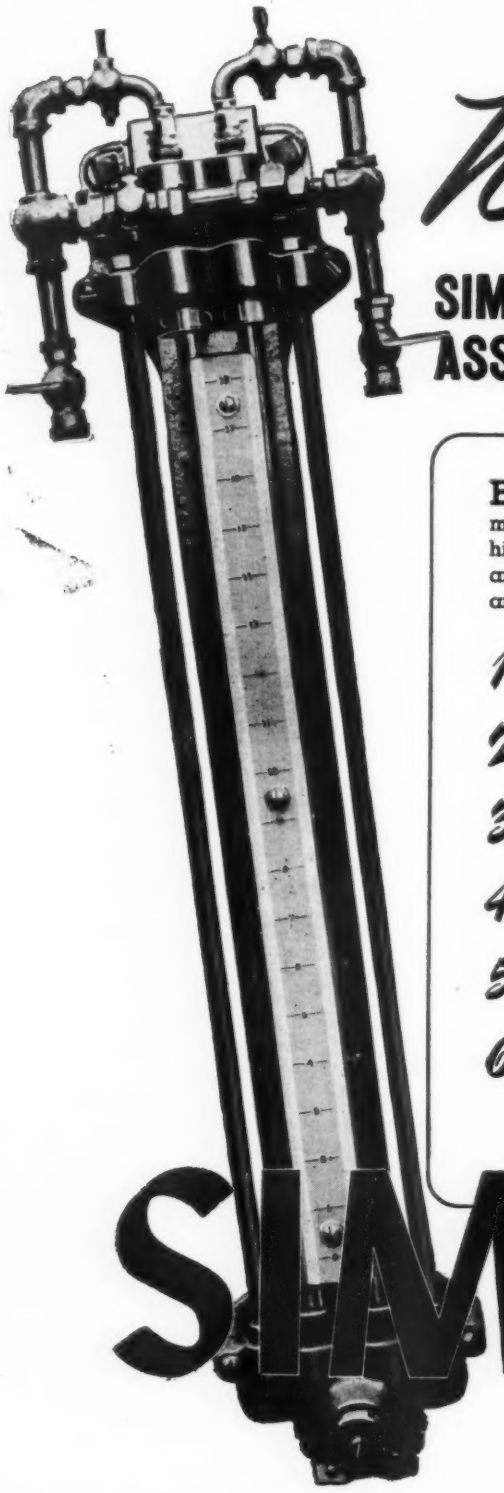
This unit has a ¾-yard loading bucket at a 35-inch height making it extra easy to load. This "power-lifted" bucket deposits load and returns to starting position in less than a minute. At the same time the hydraulic-operated packer plate is compressing the material down toward the discharge end. It is possible to compress 20 yards of wrapped garbage into this 10-yard body.

With this unit your city has a clean, sanitary means of collecting garbage with none of the unsightly and unsanitary features imposed by "open body" collectors. Your city can feel proud of its advanced thinking in purchasing a Heil Colecto-Pak.

BII-114

Write for bulletins.

THE HEIL CO.
GENERAL OFFICES • MILWAUKEE 1, WISCONSIN



here's how

SIMPLEX TYPE MAP MANOMETERS ASSURE MEASUREMENT ACCURACY!

Be sure of accuracy — with a Simplex Type MAP Manometer! This unit has been designed especially to meet the high standards of laboratory technicians, test floor engineers, and other industrial users *where accuracy is a "must"!* Here are six of the special features of the Type MAP Manometer:

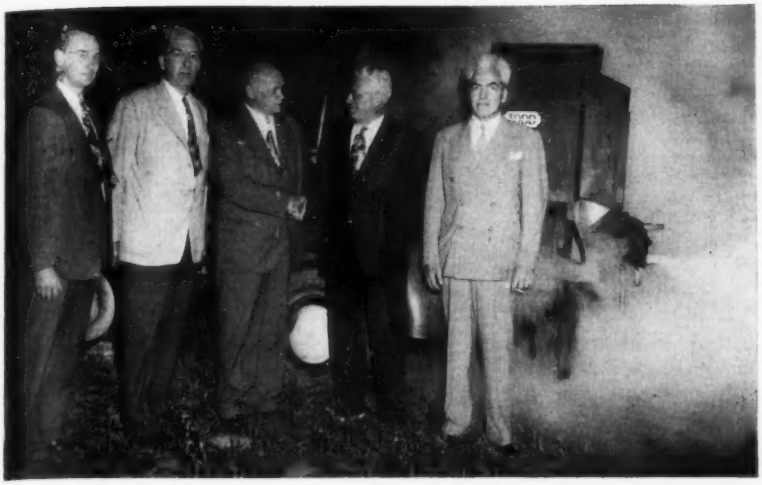
1. ***Large-diameter gauge glasses*** with accurately bored interior surfaces tending to produce a flattened meniscus!
2. ***Highly accurate scale*** permitting deflection readings of 1/100 of an inch!
3. ***Mercury dampening valve*** — essential in removing oscillations caused by line surges!
4. ***Mercury drain and filling plugs*** — for quick addition or removal of balancing liquid!
5. ***Air venting valves*** — for instant removal of air accumulations!
6. ***All-important equalizing valve*** — to enable checking and testing of instrument in place—at any time.

Want installation, operation facts? Write for free, illustrated copy of BULLETIN 200

SIMPLEX

TYPE MAP MANOMETERS
for application with Venturi Tubes, Flow Nozzles, or Orifice Plates.

SIMPLEX VALVE & METER COMPANY
6789 UPLAND STREET, PHILADELPHIA 42, PA.



Left to right: F. A. Kothe, Process Products Engineer of Socony-Vacuum Co., which furnished Sovacide 554-C, a special aromatic fog oil; Frank K. Steinrock, General Sales Manager of the Combustion Equipment Div. of Todd Shipyards Corp., 81-16 45th Ave., Elmhurst, Queens, L. I., N. Y., which makes TIFA and donated the DDT-service; Mr. Hall, Borough President of Richmond, N. Y.; Mr. Elias Bernstein, President of the Memorial Association, and Judge John D. Boylan.

TIFA Converts Swampland Into Stadium

The Todd Insecticidal Fog Applicator—TIFA—has permitted the conversion of a bug-infested swampland into a stadium for concerts and other events.

Donated by the heirs of Charles E. Griffith to the World War II Memorial Association of Staten Island, the 15-acre field in Port Richmond was treated so that citizens of the community might enjoy concerts immediately, before the land is filled and leveled. It is expected that the cost of building the grandstand and stadium will be over one half million dollars.

Laying Pipe Without Trenching

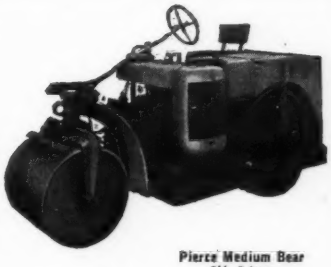
Hydrauger Corp., Ltd., announces the removal of its offices from 116 New Montgomery St. to 681 Market St., San Francisco, Calif. This gives the corporation a larger and better office layout to take care of the development of its business, which is now the largest in the history of the company.

Municipal and water works officials, contractors and others interested in equipment for installing pipe underground, without digging trenches, may find it worth while to write the company for its catalog.

A Roller For Every Job

Sturdy, heavy-duty rollers, engineered to stand up under the toughest conditions. Pierce-Bear Tandem Rollers are powered by economical Allis-Chalmers 4-cylinder industrial type gasoline engines. Variable weights, from 3½ to 5 tons with built-in water tanks for ballast and wet rolling.

Pierce Baby Bear 2½-3 tons



Pierce Medium Bear 3½-5 tons

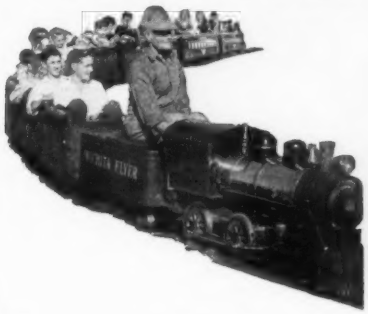
The new 2½-3-ton Pierce Baby Bear is designed for close-in work and small area maintenance. It works against a curb up to 25 inches high and within 1½ inches of a higher wall or building. Final drive is within the rear roll. Use Pierce-Bear Tandem Rollers for all-around performance. Write for folder.

Pierce-Bear Rollers

Lewis Manufactuing Co.

415 Hoefgen Ave.—San Antonio 6, Tex.

MINIATURE STEAM TRAIN BURNS COAL



The most popular ride in your park.

(A Big Revenue Builder)

An exact working replica of Santa Fe steam trains.

Write for Prices and Folder

Ottaway Amusement Co.

224 W. Douglas, Wichita 2, Kansas

CITY SURVEYS

WATER DEPT. OPERATIONS
STREET LIGHT OPERATIONS
BUDGETARY CONTROL AND FORECASTING
HOSPITAL FACILITIES
FINANCIAL; FISCAL, ECONOMIC
FIRE DEPT. AND HYDRANTS
TAX RATES, APPRAISALS AND EVALUATIONS
SCHOOL DISTRICT ECONOMIES
TRANSPORTATION
STREET TRAFFIC AND PARKING
GARBAGE DISPOSAL
MUNICIPAL ZONING AND PLANNING
CIVIL SERVICE AND PERSONNEL
SPECIAL PROJECTS
UTILITY RATES

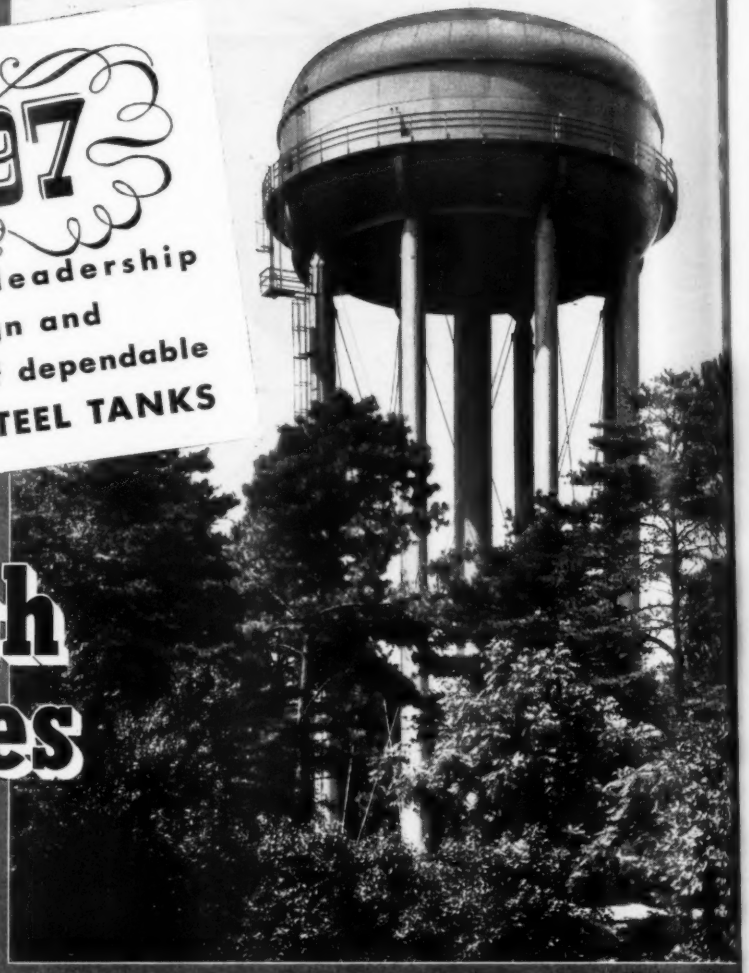
OVER 20 YEARS' SERVICE

C.T. GILLIAM & ASSOCIATES

6311 NORTH FIGUEROA ST.
LOS ANGELES 42 • ALBANY 4545

SINCE 1897

50 Years of leadership in design and construction of dependable ELEVATED STEEL TANKS



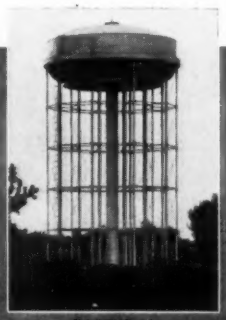
Pittsburgh Des·Moines

The first elevated steel tank erected by Pittsburgh-Des Moines Steel Company a half-century ago is still on the job today . . . a witness to original P.DM design and craftsmanship. The steady development of specialized elevated steel tank engineering, fabrication and erection by this organization through the years is attested by the thousands of dependable P.DM Tanks serving municipalities and industries throughout America and in several foreign countries. *May we consult on your particular requirements?*

DOUBLE-ELLIPSOIDAL TYPE

HEMISPHERICAL BOTTOM TYPE

VERTICAL COLUMN TYPE



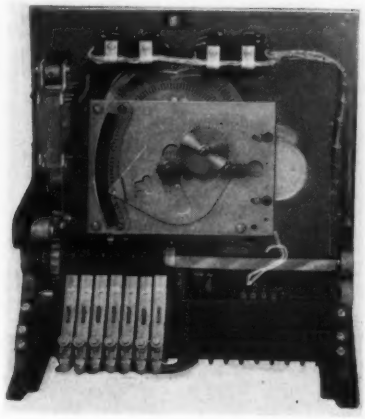
TOROIDAL BOTTOM TYPE

HEMI-ELLIPSOIDAL BOTTOM TYPE

PITTSBURGH • DES MOINES STEEL CO.

PITTSBURGH, PA., 3412 NEVILLE ISLAND • DES MOINES, IOWA, 913 TUTTLE STREET
SANTA CLARA, CAL., 619 ALVISO ROAD
NEW YORK, ROOM 915, 270 BROADWAY • CHICAGO, 1216 FIRST NATIONAL BANK BUILDING
DALLAS, 1217 PRAETORIAN BUILDING • SEATTLE, 520 FIRST AVENUE, SOUTH

A New Traffic Controller



Front and back interior of the new Marbelite Universal Controller.

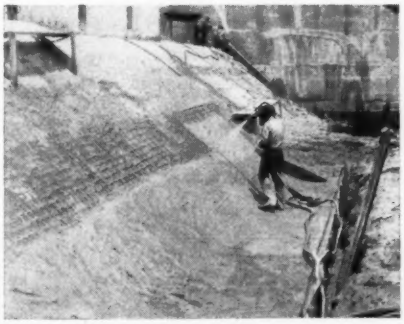
The Marbelite Company, Inc., New York 7, N. Y., announces the new Marbelite Universal Controller, designed with an eye to aid maintenance engineers. Simple, foolproof, the controller can be used in an interconnected or a non-interconnected system. It satisfies the most exacting specifications.

The controller can be expanded up to 18 periods and 17 circuits, without the replacement of any mechanical operating parts. A new-type solenoid developed and patented by The Marbelite Company, eliminates any spring or mechanical stop action and its plunger movement is positively controlled by purely magnetic action.

The driving motor is of the permanent magnet non-coasting type. Any number of non-interconnected synchronous type controllers will remain in step for well over a dozen interruptions when connected to one transformer line.

Cam movements and period changes as well as 3 re-set movements are accomplished through micro switches, which in turn are actuated by the keys on the dial. Each key locks itself into the dial, which is tamper-proofed by a window.

CEMENT GUN COMPANY
"GUNITE" CONTRACTORS
GENERAL OFFICES—ALLENTOWN, PENNA., U.S.A.



DAM REBUILT WITH "GUNITE"

This is Lower Doughty Pond Dam belonging to the Atlantic City, New Jersey, Water Department, a poured concrete structure with fresh water upstream and tide water at the downstream toe. This structure became seriously disintegrated and eroded as shown in the upper photo, and was completely restored with "GUNITE" a minimum of six inches in thickness with double mesh reinforcement.

The lower view shows the finished job completed by us in 1941. Both the upstream and downstream faces were restored with "GUNITE", as well as the wing walls.

Our 72-page general bulletin D2300 describes this and scores of other uses of "GUNITE". We shall be glad to send it to you upon request.

MANUFACTURERS OF THE "CEMENT GUN"

IT'S POWERFUL

IT'S SELF-CONTAINED

The

SYNTRON

Gasoline Hammer

PAVING BREAKER

The explosive energy of gasoline — producing 2,000 heavy, powerful blows per minute of a free Hammer Piston — make short work of

Busting
Cutting
Digging
Tamping

Write for illustrated folder.

SYNTRON CO.
430 Lexington, Homer City, Pa.

THAT'S SYNTRON

Haiss Snow Loader reduces removal costs 51%

in Ludington, Mich. (pop. 9,000)

Snows are heavy and frequent in Ludington.

Formerly, snow was removed by hand, but the City could not afford complete removal and the snow lay piled on important streets until spring. The City experimented with flushing the snow into the sewers with a fire hose, but this clogged the sewers.

In November 1945, Ludington solved its problem by buying a Haiss snow loader. For the first time, its streets could be quickly cleared for traffic—even in the heaviest snows.

James Cartier, Superintendent of Streets, takes pride in what the Haiss loader has done for Ludington and the money it has saved. "Last winter", he said, "we were all cleaned up with the loader and gone home, while nearby towns were still tied up in deep snow".

Below are Mr. Cartier's direct snow removal cost figures:

	Old Method 1944-45	Haiss Method 1945-46
Labor payroll	$4,200	$2,184
Gasoline and oil	3,077	1,634
All other expenses, repairs, etc.	1,423	459
	$8,700	$4,277

SAVING UNDER PREVIOUS YEAR: $4,423 (51 PER CENT).

Thus the direct saving for one year represents approximately 80 per cent of the loader's original cost, and Mr. Cartier's cost records show that the machine had paid for itself by March 1, 1947 (half-way through its second season).

The 18-man crew, (including six truck drivers) which formerly loaded snow by hand could handle only about 48 cubic yards per hour. The 9-man crew (including the same six truck drivers) now used with the Haiss snow loader has loaded as much as 600 cubic yards per hour.

Removing snow in Ludington with the Haiss machine is quick and efficient. The snow is first plowed into windrows in the center of the streets, usually overnight. Then the loader follows quickly, picks up the windrows, and keeps the trucks rolling to the snow dump. All streets are now kept passable throughout the winter.

On January 29, 1947, Ludington had a 12-inch snow storm, with three to seven-foot drifts. The Haiss snow loader was run for 16 consecutive hours. It immediately cleaned 14 downtown blocks representing about two miles of curb. In less than 24 hours, the downtown streets were clear. The rate of loading averaged 10 cubic yards per minute.

Write for full Information on the Haiss snow loader.

* * *

GEORGE HAISS MANUFACTURING CO.

140th Street and Park Ave. New York 51, N. Y.

Pavement Breaker Doubles As Soil Tamper

Six to eight inches' additional compaction is not unusual on standard subgrades with the R. P. B. pavement breaker converted to tamping operations.

Ditches can be backfilled more quickly and with better compaction results if a pneumatic pavement breaker is used for the work, according to results obtained by the R. P. B. Corporation, manufacturers of the pavement breaking machine.

The Rapid Pavement Breaker machine, a small pneumatically powered hammer somewhat similar to a double-acting pile driver, has been used for many years to break concrete pavement economically. However, only recently has it been converted to the duty of tamping backfill and subsoil. The machines are converted to tampers by inserting special tamping tools in the hammer head. The bottom or striking plate of the tools can vary in size, but satisfactory results have been obtained with a plate measuring 14 by 20 inches.

The use of the breaker to tamp trenches has provided many advantages. It has allowed repair work to progress much faster, eliminating delay while waiting for the trench to settle, and doing away with questionable methods of compaction by the use of water. In one test, the machine compacted a lift 4 feet thick to a density of 94% of the maximum obtained by the Proctor test at optimum moisture content in the top layers, and 90% at the bottom. In another test, the machine was used over a trench that had been settled with water and exposed to traffic for two months and pushed the soil down from 6 to 8 inches. Frequently, it has shown better results handling a layer of from 18 to 24 inches than has more conventional equipment handling 6-inch layers. Thus the breaker as a compactor is finding increasing popularity meeting soil density specifications.

At present, it is being used to tamp bridge abutments on the Los Angeles Freeway project, to tamp around dam structures in Washington, Colorado and Nevada, and is being used on irrigation projects in California and Nevada to tamp the subgrade of the water channels.

The R. P. B. Corporation is now building three standard models adaptable to tamping. These are a heavy duty truck-mounted unit and two junior models, one truck-mounted and the other mounted on a mobile trailer unit that is powered by a heavy-duty air compressor. The company has also mounted the unit on shovels and other equipment in order to extend its reach and allow it to tamp side slopes and other hard-to-reach areas.

The breaker and tamper are being manufactured by the R. P. B. Corp., 1517 Santa Fe Ave., Los Angeles 21, Calif.

New Addresses for Solvay Branches

The Solvay Sales Corp., 40 Rector St., New York 6, N. Y., has announced that the New Orleans and Houston branch offices have moved into new quarters. The New Orleans branch is now located at 1107 Pere Marquette Bldg., Baronne St., New Orleans 12, La., and the Houston office is now located at 1313 City National Bank Bldg., 921 Main St., Houston 2, Texas.

CUT ALONG THIS LINE FOR REFERENCE

IMPORTANT MEMORANDUM

FROM: THE GOLDAK COMPANY

○ TO: The "critical" buyer

SUBJECT: ELECTRONIC LOCATING EQUIPMENT

REMARKS: The GOLDAK COMPANY, manufacturers of the world's finest electronic pipe locators, metal locators and leak detectors for 15 years, unconditionally guarantees every piece of equipment sold to give maximum service and top performance.

REMEMBER . . . . GOLDAK PIPE LOCATORS
GOLDAK LEAK DETECTORS
GOLDAK BOX LOCATORS

Thousands of GOLDAKS are in use all over the world. Every piece of GOLDAK equipment is lightweight, compact, and scientifically designed for simplicity of application.
All circuits shut off automatically when machines are not in use.

○ All GOLDAK equipment uses miniature tubes exclusively . . . economical . . . efficient.

Write for descriptive brochures

THE GOLDAK COMPANY
1544 West Glenoaks Blvd., Glendale 1
California

Lower Excavation Costs

YOU CAN COUNT ON minimum excavation costs with Transite* Sewer Pipe because Transite has an exceptionally high flow capacity (n=.010). This often permits the use of flatter grades and shallower trenches. This is a particularly important advantage where rock excavation is involved or where the pipe must be laid at or below the ground water line.

As an alternate economy, designers often take advantage of Transite's high flow capacity by specifying smaller diameter pipe.

Transite Offers Other Economies, Too. Right from the start, this pipe helps you cut sewage disposal costs. Transite's long 13-foot lengths and light weight mean lower handling costs. And fewer joints to assemble in the finished line result in faster, more economical installation.

Transite Reduces Treatment Costs. As a further economy, tight sleeve-type joints guard effectively against infiltration . . . reduce the load on the treatment plant. Thus, treatment costs are kept low . . . and plant capacity can be conserved for the increased loads incident to future community growth.

Transite Cuts Maintenance Costs. Made of asbestos and cement combined into a homogeneous material of great stability, Transite Sewer Pipe is corrosion-resistant both inside and outside. Tight joints safeguard against root trouble. And every Transite length is factory-tested for strength and uniformity. This adds up to low annual maintenance costs through the years.

Get All The Facts About Transite. If you are seeking ways to lower sewage disposal costs, you'll be interested in the many economies Transite Sewer Pipe can offer you. Send for free brochure containing further engineering data. Address Johns-Manville, Box 290, New York 16, N. Y.

*Reg. U. S. Pat. Off.

Johns-Manville

JOHNS-MANVILLE JM PRODUCTS

Transite Sewer Pipe

New GMC Truck Models in the 1947 Line

This light duty pickup is one of a new line of light and medium duty models featuring new styling, sturdier chassis, and larger all-steel cabs with many comfort and safety advancements. This line also includes panel, canopy express, platform, stake, and tractor models plus many other chassis types up to 20,000 pounds gross vehicle weight.

Radical appearance changes plus innovations in cab construction in the light and medium duty models, and increased horsepower for the heavy duty gasoline and diesel models, highlight the improvements in the 1947 line of the GMC Truck & Coach Division of General Motors Corp., Pontiac, Mich.

The new light and medium GMC's will feature entirely restyled grille, hood, and fenders; larger all-steel cabs with increased visibility and greater driver comfort; stronger front and rear axles; heavier frames, and many engine improvements.

The cabs are 3¾ inches longer and 9⅝ inches wider than those of previous light and medium duty models. Of all-steel construction, they have larger weather sealed windshields, and larger doors and rear windows. The doors, nearly 6 inches wider than previous models, are of all-steel welded box construction and have concealed hinges and hold-open checks. There is provision for radio installation.

Two wholly new models are the 1½-ton and the 3½-ton trucks. There are also five special tractor models in the light duty series and three in the medium duty range.

In heavy duty lines, the hp of the 308 and 361 gasoline engines has been stepped up approximately 10%, and that of both the four and six cylinder diesel engines increased by 21 percent. Five major improvements have been made in the chassis of the heavy duty group — re-engineered front springs, better ball bearing steering, worm drive rear axles for six wheelers, power shift control for two-speed rear axles, and new double reduction rear axles.

According to GMC engineers, the hp of the 2-cycle diesel engines was stepped up through the use of larger inlet ports on the cylinder liners, an improved blower on the air box, and an increase in the amount of fuel delivered by each injector.

Founder of J. E. Sirrine and Company Dies

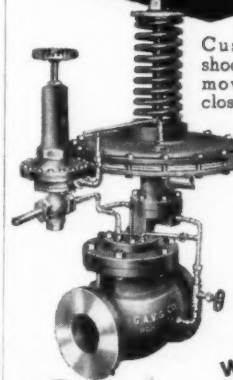
Joseph Emory Sirrine, founder and senior partner of J. E. Sirrine and Company, Engineers, Greenville, S. C., died on August 8. The firm is continuing under the name of J. E. Sirrine Company.

GOLDEN-ANDERSON

Single Acting Differential

ALTITUDE

VALVES



Cushioned against shock or jar as valve moves into open or closed positions. Needle valve control will instantly regulate speed of operation to existing pressure condition. 150 lb. to 400 lb. working pressure.

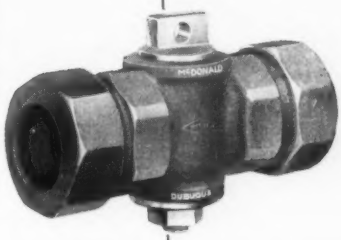
Write for Descriptive Catalog

GA

GOLDEN-ANDERSON VALVE Specialty Company

PITTSBURGH 22, PA.

Threadless GAS STOPS



with Dresser Coupling

Here is a threadless gas stop which meets all the requirements. Special machining of body and plug in one operation assures no leakage. The threadless pipe ends saves installation time and insures greater strength. Specially constructed gaskets make these stops gas tight when installed. Manufactured of high grade grey iron body with brass plug nut and washer. Made in ¾, 1, 1¼, 1½ and 2 inch sizes, and available with plain or armored gaskets. For the best in brass goods—remember McDonald and the Diamond Line.

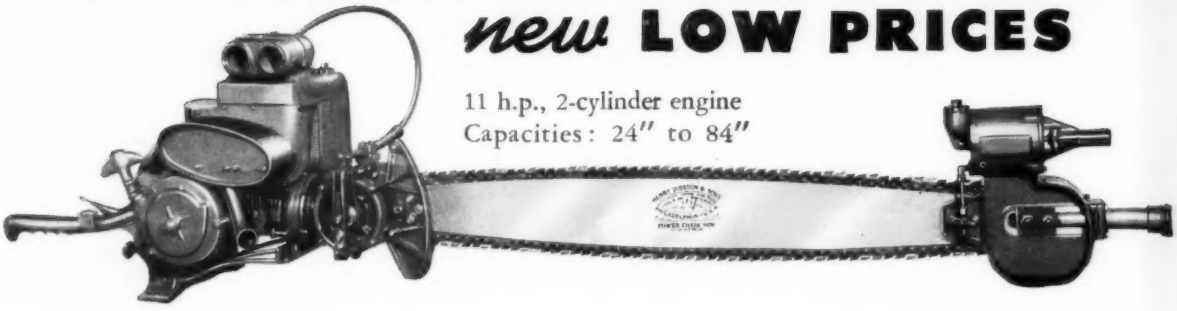
EST. 1898 McDonald

A. Y. McDONALD MFG. CO.

DUBUQUE, IOWA

BRASS GOODS • PUMPS • OIL EQUIPMENT

DISSTON CHAIN SAW
with Mercury Gasoline Engine



new LOW PRICES

11 h.p., 2-cylinder engine
Capacities: 24″ to 84″

The Disston Chain Saw is the fastest, timber-cutting, portable saw ever made. It is ruggedly built, light in weight, easy to operate, and cuts from all angles. And its numerous exclusive features combine to make it the most dependable, economical and durable chain saw ever made.

Among these features are an 11 h.p., 2-cylinder engine; a positive-acting, non-slip, multiple-disc clutch; a detachable air cleaner which keeps dust from carburetor; die-cast engine cylinders and cooling fan; gear driven magneto; fuel filter built in tank; a tough, cutting chain of Disston Steel which maintains perfect contact with drive sprocket under all load conditions.

The Disston Chain Saw is a product of Disston saw-making skill and dependability. It's a typical example of the economy of Disston quality. Thousands are now in use on operations of many kinds—in the forests; on railroad contracting, and tree service jobs; at shipyards and manufacturing plants—wherever there are heavy timbers to cut.

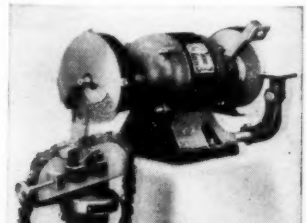
DISSTON CHAIN SAW
PNEUMATIC

HUNDREDS OF APPLICATIONS

A powerful, light weight, air-driven saw that is speeding up timber cutting and reducing costs for general contractors, railroads, shipyards, and many other users. It requires no previous experience to operate and can be used in all climates and weathers . . . even under water.

Gear housing and saw mechanism may be rotated in either direction for vertical or horizontal cutting. Equipped with heavy-duty, vane-type motor specially engineered and produced by Chicago Pneumatic Tool Company for use on Disston Chain Saws. Requires little maintenance as it is built for long, economical service.

3½ and 5 h.p. motors in 24″ and 36″ sizes. The 3½ h.p. motor requires 90 cu. ft. of air per minute, the 5 h.p. motor, 150 cu. ft., each at 90 lbs. pressure per sq. in.



DISSTON ELECTRIC CHAIN SAW SHARPENER

Enables you to do your own sharpening . . . quickly, easily; accurately. Keeps chains in first class condition.

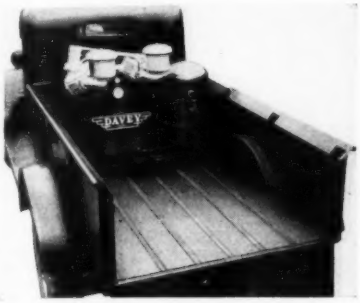
Write for full particulars, or see your Disston Distributor, who carries complete stocks of parts and is prepared to render prompt and expert service.

HENRY DISSTON & SONS, INC., 965 Tacony, Philadelphia 35, Pa., U.S.A.

Packaged Power Take-Off

Production of a "packaged" Davey Heavy Duty Power Take-off for Dodge Power Wagon trucks is announced by the Truck Equipment Div., Davey Compressor Co., Kent, Ohio.

Easily installed in the truck's driveshaft, the power take-off converts the Power Wagon into an efficient equipment truck driven directly from the Dodge engine through the take-off and



The Davey Heavy Duty Power Take-off uses, as its basic principle, an internal and external gear drive.

eliminating the need for separate auxiliary engines.

Applications of the device include its use for air compressors, generators, gas-well bailers, concrete mixers, fire-fighting equipment, rock crushers, and hammermills.

Developed in conjunction with the Dodge engineering division, the package is furnished ready for installation.

Gilbert Associates Increase Staff

William E. Yoder and Kenneth Thompson have been added to the Sanitary Engineering Department of Gilbert Associates, Inc., Reading, Pa.

Yoder, a graduate of Penn State, has formerly been associated with the Wertz Engineering Company in Reading, followed by the position of engineering officer on a minesweeper and construction battalion in the U.S.N. Thompson, also a graduate of Penn State, spent two years in the Army on petroleum control, later joining Wiggert and Dean Engineering Co., Daytona Beach, Fla., to work on designs for municipal water and sewage treatment plants.

New Trinidad Asphalt Plant

A plant for processing and blending Trinidad asphalt has recently been completed at Hartford, Ill. The new plant will serve Iowa, Missouri, Illinois, Indiana, Kentucky, Michigan, Wisconsin, and Tennessee, it was announced by Court G. Alfs, President of the Highway Co., Zionsville, Ind., which manufactures paving materials.

One of the most modern in the nation, the plant is equipped with thermostats for control of temperatures,

The Hartford, Ill., plant is in operation, processing Trinidad Lake asphalt.

welded steam-jacketed pipes, and all other modern facilities for road asphalt production. The fluxing tank can produce six tank cars full of asphalt daily. There are three storage tanks, each with a six-tank-car capacity, for holding the Trinidad asphalt, which is shipped from the island of Trinidad to the Hartford plant via New Orleans and the Mississippi River.

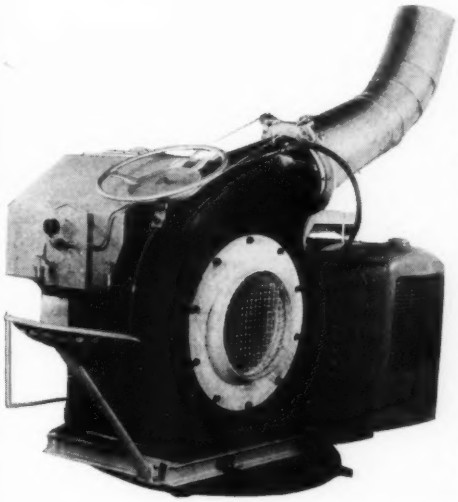
The LAWRENCE

AERO-MIST

SPRAYER

A 3-WAY INVESTMENT

FOR INSECT PEST CONTROL



Here's the new revolutionary mist sprayer that can be used by TREE, PARK and HEALTH departments for protection against defoliators, obnoxious pests and disease carrying insects. One machine for all 3 departments. Fast . . . efficient . . . economical . . . field-tested, the Lawrence Aero-Mist Sprayer projects insecticides to extreme distances in the form of a fine mist. All spray particles work in eliminating pests. Maximum pest protection at a minimum cost assured.

WRITE TODAY FOR FURTHER DETAILS, PRICES, AND FREE BULLETIN #1.

SHARE THE USE 3 WAYS—SHARE THE COST 3 WAYS

TREE DEPARTMENTS

Lawrence Aero-Mist Sprayer for the protection of shade trees and shrubs from defoliators and tree diseases.

PARK DEPARTMENTS

Lawrence Aero-Mist Sprayer for the elimination of obnoxious pests at beaches, ball parks, picnic grounds, playgrounds and public parks.

HEALTH DEPARTMENTS

Lawrence Aero-Mist Sprayer for the protection of community health from dangerous disease-carrying insects.

THE LAWRENCE AERO-MIST SPRAYER COMPANY

58 Federal St., Greenfield, Mass.

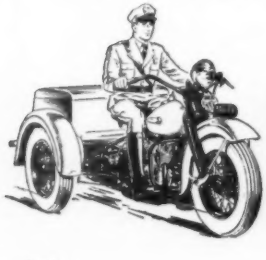
Shown above is Edward C. Mass, Inspector of Traffic, with 15 new Harley-Davidson Motorcycles received recently by the Pittsburgh, Pennsylvania, Police Department to bring the number now in use to thirty.

PITTSBURGH POLICE USE MORE HARLEY-DAVIDSONS

To Meet Today's Increasing Traffic Problems

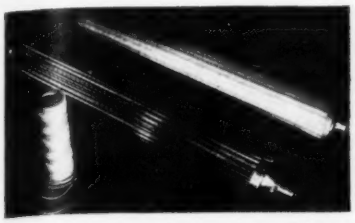
PITTSBURGH police are justly proud of their fine traffic record in 1947 and of the city's low rate of traffic deaths. Like Pittsburgh, many other cities are doing a great job of accident prevention, despite continued use of over-age cars and trucks, driver carelessness, and constantly increasing motor vehicle registrations. But frequently, police departments are hampered by lack of sufficient motorcycles, Servi-cars and sidecars. Hundreds of cities have demonstrated convincingly that no other method can match this great motorcycle combination for handling today's greatly increased traffic problems and for preventing tragic accidents. In your city, also, the use of more Harley-Davidsons will enable you to make the most of your manpower and obtain best results from modern traffic control techniques. Ask your Harley-Davidson dealer for information about the superiority of Harley-Davidson Motorcycles, Servi-cars and Sidecars for police work.

HARLEY-DAVIDSON MOTOR COMPANY • Milwaukee 1, Wisconsin



HARLEY-DAVIDSON
POLICE MOTORCYCLES

New Air Diffusion Tube for Activated Sludge Treatment



At the left is the Saran cord, which is wound around the stainless steel core, center. At right, the completed tube.

A new type of air diffusion tube for use in activated sludge treatment and in air diffusion and gas mixing for chemical processing industries has been developed by the Chicago Pump Co., 2319 Wolfram St., Chicago 18, Ill.

The Chicago "Precision" Diffuser Tube is made of corrugated stainless steel and is mechanically wound with Saran plastic cord, making it very light and strong, and giving it safety factors beyond any stresses to which the tubes would ordinarily be subjected.

Among the advantages of the "Precision" Tube are:

Thin-wall construction (1/6th wall depth of previous tubes) reduces depth-clogging and provides for quicker and more effective cleaning.

Precise uniformity of fine-bubbled diffusion from entire active surface of the diffuser at all air-rates.

Lower head loss at all air-rates.

No progressive clogging.

Corning Awards Nichols Construction Contract

Corning, N. Y., has awarded the Nichols Engineering & Research Corp., 60 Wall Tower, New York 5, N. Y., a contract for the construction of an 80-ton Nichols Monohearth mechanically stoked incinerator. The plant will be equipped with a monorail-type crane with bin for storing the refuse and placing it in the incinerator. The cost of the project is $176,920.

New Pump Manager For Fairbanks-Morse

L. A. Weom is the new manager of the Fairbanks-Morse Pump Division, replacing Arnold Brown, who recently resigned.

Mr. Weom started with Fairbanks, Morse and Co., Chicago 5, Ill., in January 1929 as an assistant in the Pump and Electric Department of the company's St. Paul, Minn., branch. Early in 1932, he became a field engineer traveling in the territory of South Dakota and western Minnesota. In 1936 he was promoted to Manager of the Pump and Electric Department of the St. Paul Branch, which position he held at the time of his recent appointment.

DISTRIBUTION ENGINEERS CUT COSTS!

FOR NEW STREET LIGHTING PROGRAMS CHECK ADVANTAGES OF

SUNSWITCH LIGHT CONTROL

✓LOW MAINTENANCE

✓PUBLIC SATISFACTION

ENGINEERED FOR UTILITIES

A rugged unit which automatically switches light "on" and "off" by means of a sensitive photoelectric cell operating entirely according to the footcandle value of daylight.

The SUNSWITCH is fully automatic in operation. Requires no impulses from the power plant or substation.

By use of the SUNSWITCH, street lighting can be operated from secondary circuits. A substantial saving in equipment and operating costs can be realized by elimination of expensive high voltage supply lines and equipment associated with series circuits.

OF INTEREST TO ENGINEERS

Broad operating range. Pole or tower mounting. "SUNSWITCH" operates on 115 or 220 volts, 25 to 60 cycles. Model No. 8239-A operating load on contacts, 3000 watts. Model No. 8239-B, 500 watts.

Improved SUNSWITCH housing and connections permit easy installation with operating parts securely sealed against weather and insects.

CHECK THESE ADVANTAGES

Positive Action • Easy to Install • Long Life • Moisture, Dust and Insect Proof • Pole or Tower Mountings • Low Maintenance Cost • 25 to 60 Cycles—110 or 220 Volt • 500 or 3000 Watt Load.

May we send you full information and specifications? Units are available for testing on your own lighting system.

Ripley

RIPLEY COMPANY, INC.

Exec. & Sales Office: 11 West 42nd Street New York 18, N. Y.

Factory: Middletown, Conn.

New GMCs

BETTER LOOKING! BETTER RIDING! BETTER BUILT!

THE LAST WORD IN *Cab Comfort*

There's comfort galore in the brand new postwar cab of new light or medium duty GMC models! It's all-steel . . . rubber stabilized . . . wider and longer . . . completely insulated and soundproofed. Its wider seat is adjustable forward and backward. Its windshield is higher and wider . . . visibility greater all around. Its unique ventilation system provides circulating fresh air . . . heating and defrosting if desired.

Out front, there's added protection with rugged bumper bar grille, frame-mounted and angle-braced. Under the hood, there's war-proved, improved power with engines of "Army Workhorse" design. Under the load there's the strongest, sturdiest chassis GMC has ever built for light and medium duty hauling.

GMC TRUCK & COACH DIVISION • GENERAL MOTORS CORPORATION

Above—GMC's new cab has 8 inches more seating width . . . thick upholstery and padding . . . 73 individually wrapped springs.

Below—GMC's revolutionary new ventilation system provides scientific fresh air circulation, plus forced air heating if desired.

THE TRUCK OF VALUE

GMC TRUCKS

GASOLINE • DIESEL

Porteus Named President Of Sterling Engine

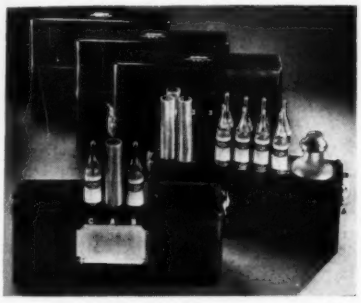
James B. Porteus was recently elected to the Board and named President of the Sterling Engine Co., Buffalo, N. Y.

James B. Porteus

Mr. Porteus, succeeding Addison F. Vars, who is resigning, was formerly with the Westinghouse Electric International Co. in charge of distribution in Brazil and subsequently in the northern section of Latin America.

Sterling manufactures diesel and gasoline engines for marine and industrial use.

Plastic Comparators For Water Testing



The new LaMotte block comparator is non-corrodible, and comparativly small in size for more facile handling.

The LaMotte Chemical Products Co., Towson, Baltimore 4, Md., has available for immediate shipment its new block comparators in plastic for use in pH, chlorine, phosphate and polyphosphate, and other adaptable colorometric procedures.

The manufacturers assert that by means of a tapering arrangement in the plastic mold, sharper color fields are obtained.

Forty-six Exhibitors for New England Water Works

A record number of 46 members of the Water and Sewage Works Manufacturing Association have reserved exhibit space at the forthcoming Annual Convention of the New England Water Works Association to be held at the Hotel Statler, Boston, Mass., September 16-19, 1947. Those reserving space include:

Albert Pipe Supply Co., THE AMERICAN CITY, Builders-Providence, Centriline Corp., Chapman Valve Mfg. Co., Chicago Bridge & Iron, Dresser Mfg. Div., Eddy Valve Co., Edson Corporation, *Engineering News-Record*, Engineering Sales Corp., Flexible Underground Pipe Cleaning Co., Hersey Mfg. Co., Homelite Corp., Hydraulic Development, Jenkins Brothers, Johns-Manville, Layne-New York Co., Leadite Company, Lock Joint Pipe Co., Ludlow Valve Mfg., Mueller Co., National Water Main Cleaning Co., Neptune Meter Co., Northrop & Co., Payne Dean Co., Pitometer Co., Inc., Pittsburgh Des Moines Steel, Pittsburgh Equitable Div., Pittsburgh Pipe Cleaner Co., Preload Corp., Prescott & Sons, %Proportioneers%, *Public Works Magazine*, Red Hed Mfg. Co., Smith Mfg. Co., Thomson Meter Corp., U. S. Pipe & Foundry, Utilities Supply Co., Wailes Dove-Hermiston Wallace & Tiernan Co., Warren Foundry & Pipe, *Water and Sewage Works Journal*, *Water Works Engineering*, R. D. Wood Co.

R. E. Ferguson Joins Worthington-Gamon

R. E. Ferguson, previously associated with the Hersey Mfg. Co. of South Boston, has joined the staff of Worthington - Gamon Meter Co., 296 South St., Newark 5, N. J.

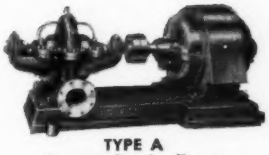
R. E. Ferguson

Mr. Ferguson's position is that of special representative for Worthington - Gamon, operating in the New England states of Maine, New Hampshire, and Vermont.

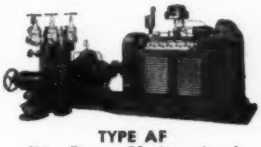
Where there's a PUMP in your Plan

SPECIFY

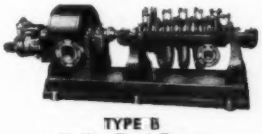
PEERLESS



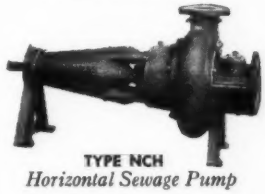
TYPE A
General Service Pump



TYPE AF
Fire Pump Underwriters' Approved



TYPE B
Boiler Feed Pump



TYPE NCH
Horizontal Sewage Pump

PEERLESS PUMP DIVISION
FOOD MACHINERY CORPORATION
Factories:
Indianapolis, Ind. • Quincy, Ill. • Los Angeles 31, Calif.
District Offices: Canton 2, Ohio; Philadelphia: Suburban Square, Ardmore, Pa.; Atlanta: Rutland Bldg., Decatur, Ga.; Dallas 1, Tex.; Los Angeles 31, Calif.

PEERLESS CENTRIFUGAL PUMPS ARE MANUFACTURED IN AN EXTENSIVE SERIES OF ADVANCED TYPES, SIZES AND CAPACITIES UP TO 70,000 G.P.M.

For diversified, heavy-duty services in Municipalities and Waterworks, Peerless centrifugal pumps incorporate many proven design features for extended pump life, minimum down-time and operative economy.

GENERAL SERVICES

Peerless type A pumps afford top-flight, continuous duty operation with capacities from 50 to 70,000 g.p.m. Heads: 15 to 300 ft. All types of drives: 1 to 1000 h.p. Sizes: 2" to 42" discharge. Split-case, single stage, double suction type.

FIRE PUMPS

Peerless Underwriters' Approved fire pumps are available for all fire protection services. Capacities: 500 to 2000 g.p.m. Pressures: to 150 lbs.; single and double stage types, for electric, engine, turbine drive or combinations.

BOILER FEED

Peerless type B multi-stage pumps are for Boiler feed services requiring capacities of 50 to 900 g.p.m. and handling pressures up to 700 lbs. For electric and other type drives from 60 to 350 h.p.

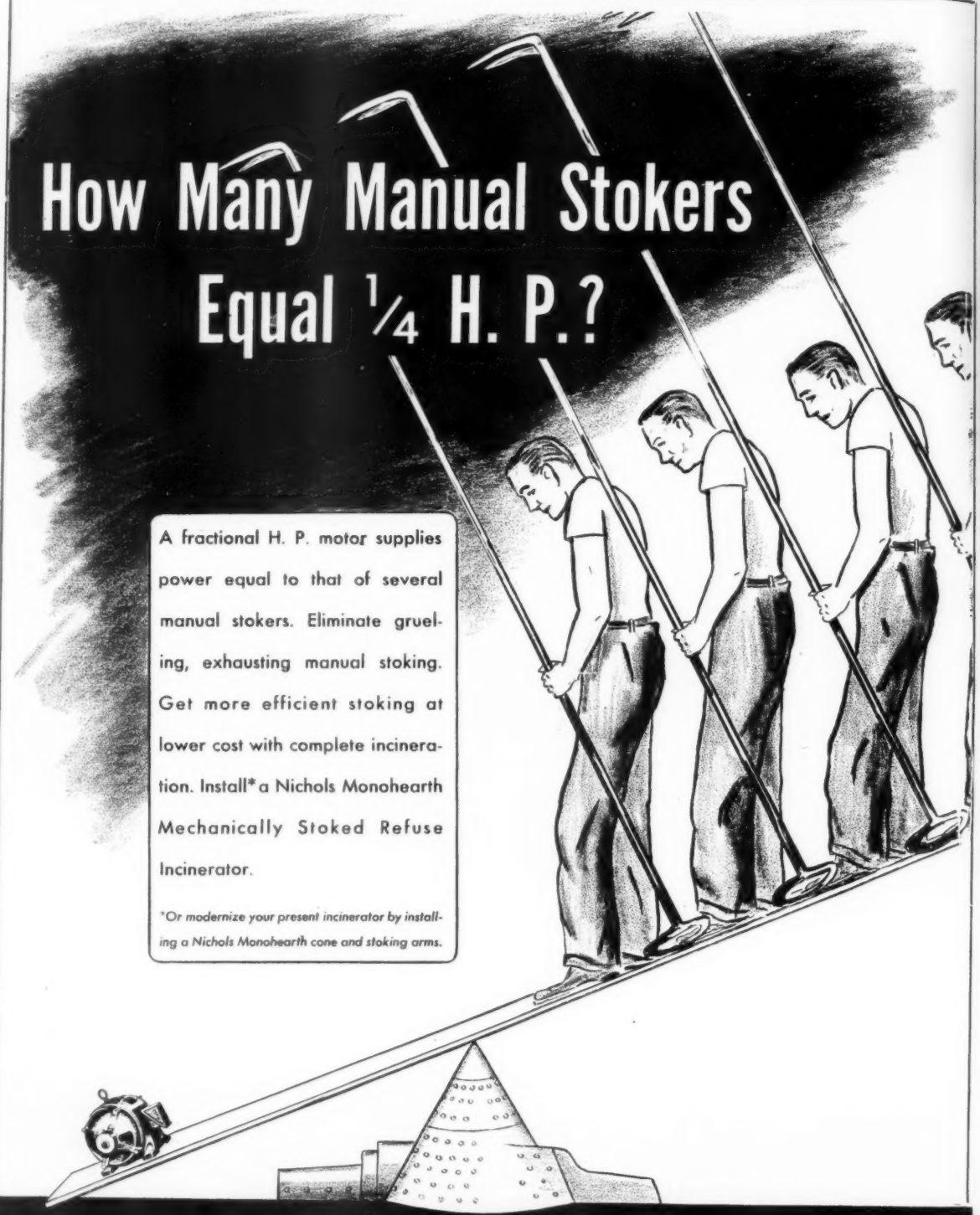
SEWAGE AND RE-LIFT

Peerless Non-Clog type NCH pumps are designed for dry basin installation in capacities from 100 to 7000 g. p.m. Heads: 12 to 70 ft. All types of drives: 1 to 100 h.p. Unique repelling shroud vanes utilized for a most dependable method of pumping entrained solids. Vertical type also available.

PEERLESS PUMPS

FOR MOST SERVICES IN ALL INDUSTRIES

How Many Manual Stokers Equal ¼ H. P.?



A fractional H. P. motor supplies power equal to that of several manual stokers. Eliminate grueling, exhausting manual stoking. Get more efficient stoking at lower cost with complete incineration. Install* a Nichols Monohearth Mechanically Stoked Refuse Incinerator.

*Or modernize your present incinerator by installing a Nichols Monohearth cone and stoking arms.

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ENGINEERING & RESEARCH CORPORATION

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UNIVERSITY TOWER BUILDING, MONTREAL, CANADA

Clay Pipe Makes Base For Water Fountains

National Clay Pipe Manufacturers, Inc., 111 W. Washington St., Chicago 2, Ill., caught this picture of pipe, clay pipe, and gravel combining to perform a useful service.

American ingenuity devised a method of erecting one municipality's drinking fountains without disturbing a low budget. A few feet of pipe in a section of clay pipe filled with coarse gravel to supply drainage for the unconsumed water, and a serviceable and attractive fountain is the result.

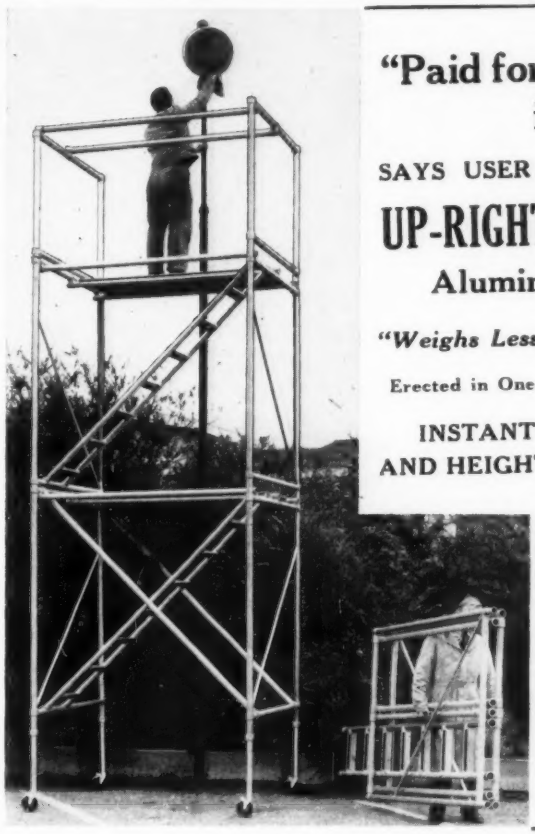
Revised Catalog Published Of Gurley Instruments

A newly revised edition of a 50-page illustrated catalog has been published describing the complete line of Gurley engineering instruments for construction work and surveying. Water level recorders and current meters in hydrological studies and operation, hand levels, plummets, and instruments for the fields of meteorology, aeronautics, industrial testing, and research laboratory work are also discussed.

Glass reticles, an exclusive Gurley development in surveying instrument design, replacing the platinum wire reticle, are illustrated and described in pattern designs shown from parallel, horizontal, and vertical lines, combined with cross-lines for triangulation and stellar observation, to solar reticles for centering the sun's image.

The transits discussed include: the Hell Gate Precise transit—engineer, mountain, and mining models; the Standard Precise transit—engineer and reconnaissance models; mining transits; the telescopic solar transit, and the contractors and architects transit.

Copies of the catalog, No. 50, may be had from W. & L. E. Gurley, Troy, N. Y.



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Aluminum Alloy

"Weighs Less Than the User"

Erected in One Minute per Section

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No Loose Parts

Each Section Folds Flat

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Fresh, high quality broom fibres last longer

AFRICAN BASS FIBRES

INDIA PALMYRAH STALKS

The longer mileage you obtain from fresh broom fibres means less time-taking refilling of the broom core and valuable man-hours put to an extra use. The use of fresh, high-quality fibres in your mechanical sweeper is sound economy these days.

We are able to service every need in all types and sizes. We would be happy to receive your request for samples and quotations.

MOUNTAIN HICKORY SPLINTS

STEEL WIRE SWEEPER STALKS

The OTTO GERDAU CO.

Established 1872

82 Wall Street, New York 5, N. Y.

Interior of a 48" rivetted steel water main with cement lining by Preload

PRELOAD Pipe Lining

HOW PIPE LINING CAN COST LESS THAN THE YEARLY INCREASE IN EARNING POWER IT MAKES POSSIBLE

If there is a ready market for additional water in your community, the increased earning power of your water main due to increased capacity made possible by PRELOAD Pipe Lining, can offset the cost of pipe lining.

To illustrate this point we have taken figures from an actual job. If the increased capacity of 38,000,000 gallons per day could all be sold at 5 cents per 1000 gallons, a not unreasonable assumption in this day of heavy water service demands and expanding industrial use, the results would be as follows:—

INCREASED CAPACITY

Combined capacity after cleaning & lining	83,000,000 G.P.D.
Combined capacity before cleaning & lining	45,000,000 G.P.D.
Increased Capacity	38,000,000 G.P.D.

POTENTIAL EARNING POWER

38,000,000 G.P.D. @ 5c per 1000 gallons	$ 1,900 per day
	or
Potential Increase in Earning Power	$ 700,000 per year
Entire Cost of Cleaning and Lining	$ 629,800
Surplus of 1 year's earning over cost	$ 70,200

CAPITAL SAVINGS

Estimated cost of new 48" pipe line	$2,362,050.00
Cost of Rehabilitation of existing line	$ 629,800.00
Capital Savings	$1,732,250.00

PRELOAD Cement Lining, utilizing tried and tested Preload Equipment, is at your service for conservation of your water main investment, possible increase in earning power, and increased flow capacity.

Send for our Pipe Lining Bulletin

THE PRELOAD COMPANIES

420 LEXINGTON AVE., NEW YORK, N. Y.

Designers and Builders of Prestressed Concrete Storage Tanks and Pressure Pipe
Prestressed Concrete Bridges and Cement Lining of Pipe in Place

The Preload Corporation
New York—Boston—Washington

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PRELOAD

Preload Pacific Corporation
San Francisco—Los Angeles

The Preload Co. of Canada, Ltd.
Montreal—Toronto—Halifax

All-Steel Settee for Parks

The Stewart Iron Works Co., Inc., Covington, Ky., is manufacturing a new all-steel settee for parks and municipal squares.

Known as the Samson all-metal settee, the product has a hot-dipped galvanized framework, No. 15 gauge steel slats, painted green, and bolted to the framework with flat, round-head galvanized bolts.

The manufacturer claims these ad-

vantages: no damage to clothes, since all corners are rounded and there are no sharp edges; no splinters, no deterioration, no rotting from exposure.

The settee may be obtained in four-, five,- and six-foot lengths.

Pick-Up Dump Truck Has Automatic Hydraulic Control

The "Pick-Up Dump" truck manufactured by the National Truck Equipment Co., Waukesha, Wis., is the first pick-up-size dump-truck with completely automatic hydraulic cab control, according to the manufacturers.

Designed for municipal use for short hauls and small-bulk handling, the

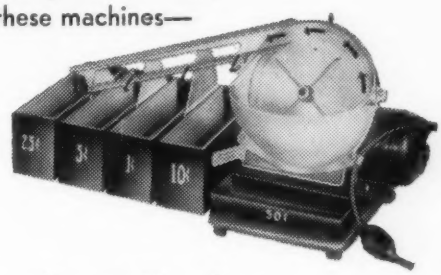
Pick-Up Dump is adaptable to almost every make and body style in the ½-, ¾-, and 1-ton ratings and is available as a complete unit with dump body or as a kit for the conversion of a standard pick-up into a Pick-Up Dump truck.

Included in the conversion kit are the power-pack, or hydraulic pump; hoist and subframe, hose, and connecting parts; parts necessary to convert the standard tailgate into a double-acting tailgate, and the body sub-frame. The hydraulic hoist raises the body to the proper angle with a 17-inch stroke and is hydraulically actuated by the power pack operated off the fan belt.

for Parking Meter Coins

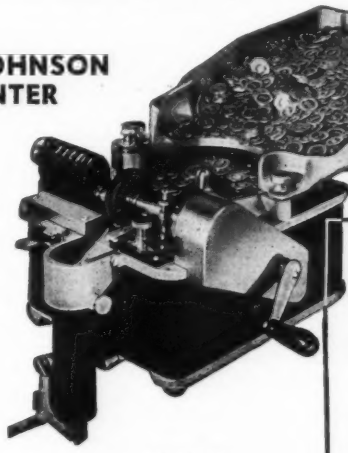
Even the smallest village with limited budget can afford these machines—

THE UNIVERSAL COIN SORTER



This ingenious little machine quickly and automatically assorts half-dollars, quarters, dimes, nickels and pennies—each coin dropping into the correct compartment without human guidance.

THE DOWNEY-JOHNSON COIN COUNTER



COUNTS WRAPS and BAGS

NICKELS, PENNIES, DIMES, QUARTERS, and HALVES

17½ lbs.

This Downey-Johnson Model 20 PH Coin Counter counts, wraps and bags coins of all denominations.

Every package accurately counted and double-checked

It will count and wrap 175 rolls of coins per hour—or bag 35,000 nickels per hour.

WRITE TODAY FOR DETAILS AND PRICES

Here is a practical investment that pays dividends daily!

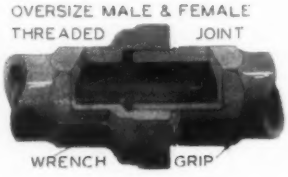
We Will Gladly Send You a List of Cities Using This Equipment

UNIVERSAL BUSINESS EQUIPMENT COMPANY

537 S. Dearborn Street **Chicago 5, Ill.**

McWANE Threaded Joint

2" CAST IRON PIPE the 100 YEAR PIPE for SMALL Water MAINS



The oversize THREADED joint with hex grips, illustrated above, holds the wrench firmly and makes it easy for even unskilled men to lay. Cast Iron Pipe is rust-resisting. No other pipe lasts so long and costs so little per year. You SAVE on installation cost and maintenance with McWane Cast Iron 2" THREADED Joint Pipe.

McWANE CAST IRON PIPE CO.
Birmingham 2. Alabama

How to "keep out of the LANDSCAPING BUSINESS"

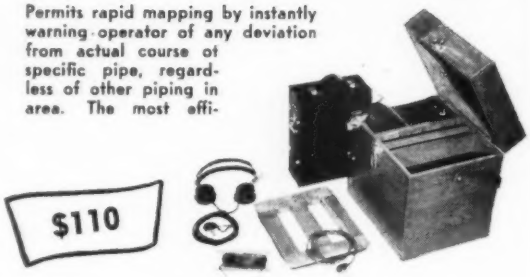
Here's the house you've got to get your pipe-line to!
Hazard No. 1 . . . is a "jungle" of expensive landscaping impossible to trench thru.
Hazard No. 2 . . is a p[illegible], heavy traffic, [illegible]ect.

Solution . . .
a HYDRAUGER will bore an open-hole for *your pipe-line*, under the street, under the expensive landscaping, and right into the basement of the house if you want. And that's how to keep out of the landscaping business!

HYDRAUGER*
*Reg. U. S. Pat. Off.
EARTH BORING TOOL
HYDRAUGER CORPORATION, LTD.
116 New Montgomery St., San Francisco, Calif.

ALLEN-HOWE PIPE LOCATORS

Permits rapid mapping by instantly warning operator of any deviation from actual course of specific pipe, regardless of other piping in area. The most efficient, practical instrument devised for taking "guess work" out of pipe laying and maintenance. Used by U. S. and foreign governments and thousands of municipalities and industries throughout the world.



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Write for prices, stating capacity, height to bottom, and location.

R.D. COLE MFG. CO. ESTABLISHED 1854
Newnan Ga.

New Street Sweeper

The Wayne Motor Sweeper has a top speed of 15 mph, with a cruising and sweeping speed of 8, and can sweep within an inch of parked cars.

The Brown-Bevis Equipment Co., 4900 Santa Fe Ave., Los Angeles 11, Calif., is now delivering the new Wayne motor sweeper—a self-propelled, pick-up type machine—for street sweeping.

Three distinct improvements, according to the manufacturer, insure clean-swept streets: the pump-fed spray system feeds water under pressure to the nozzles, atomizing the spray to prevent the formation of mud which would adhere to the surface of the pavement or the pick-up broom; the free-floating suspension of both the pick-up and gutter brooms, and the ease of adjusting both brooms to the proper pressure on the pavement, guarantee maximum sweeping efficiency under any street conditions; finally, the pick-up broom guards and shoes are so designed that dirt and refuse cannot pass around the ends of the broom. No bridges of unswept material are left on the streets.

The extremely short (14-foot) turning radius of the Wayne allows the sweeper to be turned about and reversed, for backing or filling. The three-wheel design, with steering on the single rear wheel controlled by a simple standard Ford steering mechanism, enables the Sweeper to be maneuvered in and out between parked cars.

The machines have a capacity of 2 cubic yards.

Davey Appoints Distributors

The Davey Compressor Co., Kent, Ohio, has appointed distributors in the states of Tennessee, Oregon, and Maine.

The S. J. Reed Co., 204 Forest Ave., Portland, Me., will offer complete Davey service facilities and will maintain a compressor rental fleet in Maine. The company, which is the exclusive Maine distributor, will handle all items of the Davey line.

Fly & Harwood, Inc., 300 Madison Ave., Memphis, Tenn., will handle the entire Davey line in Tennessee, including Air Chief portable compressors; Auto-Air (truck mounted) units; Track-Air (tractor mounted) machines; Departmental (industrial) compressors; mine and railway compressors; heavy duty truck power take-offs, and portable lighting equipment.

Appointed to a Davey dealership, the Cal.-Ore. Machinery Co., 944 South Central Ave., Medford, Ore., will cover the counties of Coos, Curry, Douglas, Harney, Jackson, Josephine, Klamath, and Lake, in Oregon.

INSTALLATIONS WORLD WIDE

LARGEST CITY TO SMALLEST VILLAGE

VALVES COMPLETE EQUIPMENT FOR WATER WORKS FILTRATION AND SEWAGE DISPOSAL PLANTS

LATEST "COREY TYPE" HYDRANTS

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Hubbell Bldg., Des Moines, Iowa

Plant:
Oskeloosa, Iowa

● There are no tricky kinks of design in the Buffalo that are hard to understand or that make assembly difficult. No experts are needed to make a replacement or repair. There are fewer parts and they are all accessible.

Fair metering is a matter of ethics and it's the neighborly thing to install meters so that small flows or large flows are recorded accurately. In a small community Buffalo made American or Niagara Water Meters are first choice.

Cities, too, find the simplicity and moderate cost of Buffalo Meters make them the best investment.

Write for information covering simple design, easy assembly and interchangeability of Buffalo Meter parts.

AMERICAN BRONZE CASE

NIAGARA GALV. IRON CASE

WATER METERS

BUFFALO METER COMPANY

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Simplicity

DOWN TO A GNAT'S HEEL
Ever wonder why Murdock Outdoor Drinking Fountains seldom get out of order?
The Red Brass Valve and Valve Stem are machined to a gnat's heel—precision finished.
Murdock Fountains have been known to be on the job for years without any attention.
Every drink is fresh from the water main. Supply pipe drains each time. Does not freeze up.
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The Murdock Mfg. & Sup. Co.
426 Plum St. Cincinnati 2, Ohio
MURDOCK
OUTDOOR DRINKING FOUNTAIN
ANTI-FREEZING COMPRESSION HYDRANT
LARGE ANTI-FREEZING HYDRANTS 1½" TO 2" INCLUSIVE
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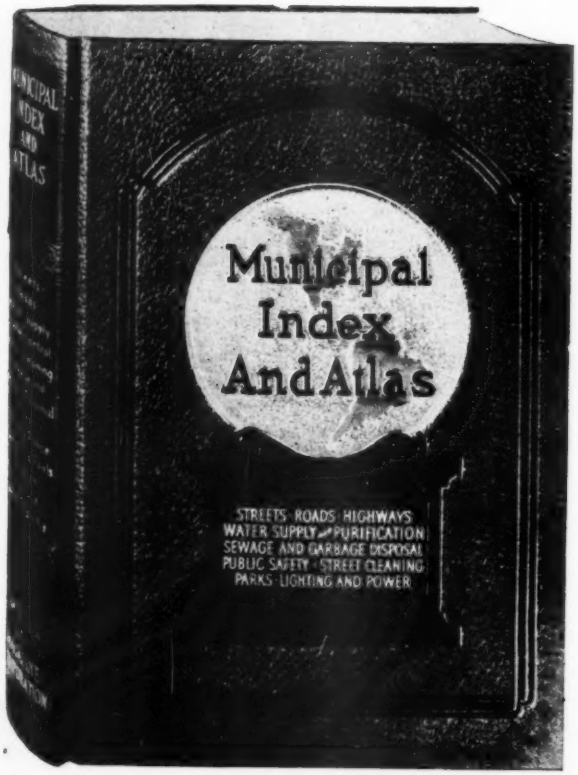
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If you want up-to-date information on any type of municipal equipment, consult The Municipal Index.

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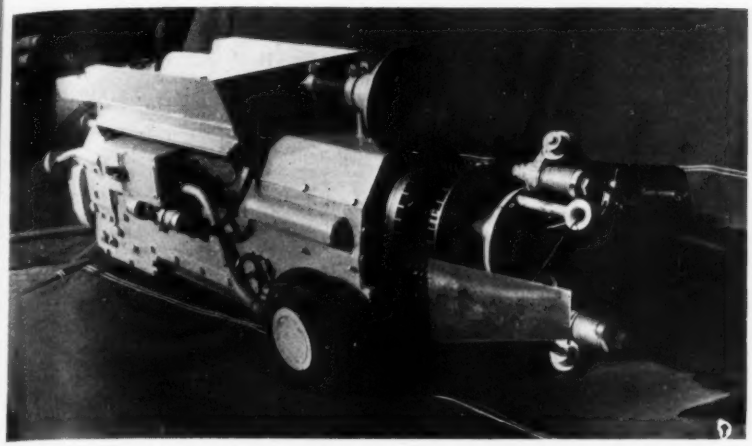
New Pipe Lining Machine Demonstrates Efficiency



Centriline's 24-inch lining machine, which was recently tested in Newark.

An underground test demonstration, on 1,000 feet of 24-inch cast iron distribution lines operated by the Newark Water Department, has shown the efficiency of the new 24-inch centrifugal cement-mortar lining machine, manufactured by the Centriline Corp., 140 Cedar St., New York 6, N. Y., and pictured above.

The 24-inch machine is built on the same principle as the larger Centriline machines. It is 36 inches long, 22 inches high, and about 18 inches wide, and is electrically operated. The machine receives mortar, accurately proportioned and carefully mixed above ground, by means of small buggies that carry the mortar from feed holes located at 1,000-foot intervals along the pipe to the machine. The machine then forces the mortar by a feed screw through a rotating dispensing head which projects it centrifugally onto the walls of the pipe. Immediately following this dispensing head are slowly revolving trowels, mechanically operated, which work the cement lining into a smooth surface finish. The lining machine travels at a uniform rate through the pipe; its speed, which is determined by the thickness of the lining desired, is mechanically regulated and insures uniform thickness. The lining machine travels at a speed of 3.8 feet per minute and moves steadily away from the applied cement mortar, allowing nothing to come in contact with the finished lining.

Chain Belt Appointment

Mr. Charles Stanton has been appointed district field-engineer in the Philadelphia Office of Chain Belt Company, Milwaukee, Wis.

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CRACK SEALER
TARCO POTS

dippers and buckets, many shapes and sizes, for handling hot tars, pitch and asphalt. Quality built, tested, all welded. Pamphlet?

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50 Years of Service to Water Works in the U.S.A., Canada & Latin America

THE PITOMETER COMPANY
Water Distribution Engineers
50 Church Street — New York 7, N. Y.

Line Material Names New Vice-President

W. D. Kyle, Jr., has been appointed Vice-president of the Line Material Company. A director of the company since 1945, he will serve as executive assistant to his father, W. D. Kyle, L-M president.

W. D. Kyle, Jr.

After doing public power utility work following graduation from change, he joined the Line Material Company's Industrial Engineering Department doing ing plant layout and production efficiency work, and later was transferred to the Research and Development Department.

In 1939 he became president of the Kyle Corporation, manufacturers of oil circuit reclosers, sectionalizers, and connectors. For the present, he will maintain his presidential position with the Kyle Corporation in addition to his executive duties in Line Material.

Lovejoy to Handle Liquon Sales

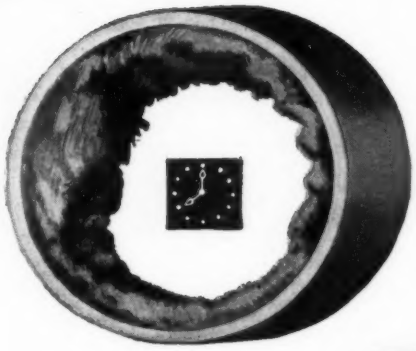
William O. Lovejoy has been appointed Florida representative by the Liquid Conditioning Corp., Linden, N. J., to handle the sale of Liquon and Liquonex products for all water treatment processes and for conditioning other liquids.

Mr. Lovejoy's experience in the field has included the position of manager in charge of the filtration plant of the Louisville, Ky., Water Works.

New Branch for Okonite

The Okonite Co., Passaic, N. J., has established a new sales office at 516 Building Industries Bldg., 626 Broadway, Cincinnati 2, Ohio.

The branch is under the supervision of S. W. Pollock, who will handle the sales of Okonite, Hazard, and Okonite-Callendar electrical wires, cables, and splicing tapes in southern Ohio.



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Index to Advertisers

Abrams Aerial Survey Corp. 189
Acme Equipment Co., Inc. 153
Allen-Howe Electronics Corp. 184
Allis-Chalmers Tractor Div. 79
American Coach & Body Company.. 35
American-Marsh Pumps, Inc. 48
American Structural Steel & Tank Co. 36
American Tel. & Tel. Co. 6
Anthracite Equipment Corp. 64
Architects, Landscapes 189-193
Armstrong Associates 189
Austin-Western Company 85
Automatic Control Co. 151
Automatic Voting Machine Corp.. 156

Badger Meter Mfg. Co. 25
Baker Manufacturing Co. 27
Barber-Greene Co. 71
Barnes and Company, A. S. 153
Barrett Division, The 84
Bi-Lateral Fire Hose Company ... 82
Black & Veatch 189
Briggs & Stratton Corp. 82
Buck, Seifert & Jost 189
Buffalo Meter Co. 185
Burns & McDonnell Eng. Co. 189
Burroughs Adding Machine Company 77
Business Research Corporation ... 189

Cast Iron Pipe Research Assn. ...64, 67
Caterpillar Tractor Co. 154
Cement Gun Co. 169
Central Foundry Company 57
Centriline Corporation 63
Champion Corporation 68
Chicago Tank & Bridge Company .. 68
Chicago Bridge and Iron Co. 8
Circul-Air Corporation 161
Cleminshaw Co., J. M. 189
Coff, L. 189
Cole-Layer-Trumble Co. 190
Cole Mfg. Co., R. D. 184
Consulting Engineers 189-193
Crouse-Hinds Co. 142

Damon & Foster 190
DeLaval Steam Turbine Company .. 62
De Leuw, Cather & Co. 190
Dempster Brothers, Inc. 157
Dick Company, A. B. 76
Disston & Sons, Inc., Henry 174
Drott Mfg. Corporation 67
Dual Parking Meter Co. 130b
Duncan Meter Corp. 148

Electric Tamper & Equipment Co. .. 26
Electrical Testing Laboratories, Inc.. 190
Expanding Sewer Mach. Co. 36

Fairbanks, Morse & Co. 55, 151
Fisher Research Laboratory, Inc. .. 31
Flexible Sewer-Rod Equipment Company 149
Flink Company 58
Flood & Co., Walter H. 190
Ford, Bacon & Davis, Inc. 191
Ford Meter Box Co. 82
Four Wheel Drive Auto Co. 33

Gamewell Co., The 16
Gannett, Fleming, Corddry & Carpenter, Inc. 191
Gardner-Denver Company 56
General American Transportation Corp. 41
General Electric Co. 132, 140
Gerdau Company, The Otto 181
Gilliam & Assoc., C. T. 167
Globe Phone Mfg. Corp. 161
GMC Truck & Coach Division, General Motors Corp. 178
Goldak Company 171
Golden-Anderson Valve Spec. Co... 173
Gorman-Rupp Co. 40
Griffenhagen & Associates 191
Gunite Concrete & Const. Co. 68

Haiss Mfg. Co., Inc., George 170
Hand Laboratory 162
Hardie Mfg. Company 155
Harley-Davidson Motor Co. 188
Hazard Insulated Wire Works 138
Heil Co. 165
Highway Equipment Co. 28
Holmes & Narver 191
Holophane Co., Inc. 130
Homelite Corporation 81
Horan Co., The George B. 191
Hydrauger Corp., Ltd. 184

Inertol Co., Inc. 159
Infilco, Inc. 36
International City Manager's Assn.. 74
International Harvester Co. 65
International Meters, Inc. 139
International Salt Co., Inc. 52, 53
Iowa Valve Company 185

Jaeger Machine Co. 162
Johnston & Jennings Co., The 151
Johns-Manville 34, 172
Joslyn Mfg. and Supply Company .. 146

Karpark Corp. 156
Klett Mfg. Co. 80
Koehring Company 43
Kwik-Mix Co. 42

Laboratories, Testing 189-193
Lawrence Aero-Mist Sprayer Co. .. 175
Layne & Bowler, Inc. 14
Leadite Co. 80
Leaf Loader Div. 36
Lewis Manufacturing Company.... 167
Littleford Bros., Inc. 80
Lochner & Company, H. W. 191

Mack Manufacturing Corp. 59
Magee-Hale Park-O-Meter Co. ... 134
Martin Machine Co. 188
Mathieson Alkali Works, Inc. 70
McDonald Mfg. Co., A. Y. 173
McGraw & Co., F. H. 192
McWane Cast Iron Pipe Co. 184
Metcalf & Eddy 192
Mi-Co Meters 152
Miro-Flex Co. 30
Modern Manufacturing Co. 163
Morse Boulger Destructor Company. 24
Mueller Co. 12
Murdock Mfg. & Supply Co. 186

National Clay Pipe Manufacturers, Co. 54
National Supply Co., The 61
National Water Main Cleaning Co.. 188
Neptune Meter Co. 86
Nichols Engineering & Res. Corp. . 180
Nordberg Mfg. Co. 38, 39
Nutting Company, H. C. 192

Ottaway Amusement Co. 167
Ozone Processes, Inc. 68, 193

Palmer Filter Equipment Co. 64
Parsons Company 42
Parsons, Brinckerhoff, Hogan & MacDonald 192
Peerless Pump Division 179
Permutit Co. 83
Pitometer Co. 187, 193
Pittsburgh Corning Corp. 69
Pittsburgh-Des Moines Steel Co. .. 168
Pittsburgh Equitable Meter Div. .. 37
Pittsburgh Pipe Cleaner Company .. 164
Pittsburgh Plate Glass Co. 195
Pittsburgh Testing Laboratory ... 192
Pollard Co., Inc., Joseph G. 30
Preload Companies 182
Premax Products Division 64
Pressure Concrete Co. 72
Prismo Safety Corp. 147

Quinn Wire & Iron Works 80

Refinite Corp., The 64
Reflecto Letters, Inc. 30
Regester, Robert T. 193
Remington Rand Inc. 78
Rensselaer Valve Company 4
Rhodes, Inc., M. H. 160
Ripley Co., Inc. 177
R. P. B. Corporation 18
Robert & Co. 193
Ross Valve Mfg. Co., Inc. 157
Rusta Restor Division 151
Ryerson & Son, Inc., Joseph T. 10

Sanitary Engineers 189-193
Schoonmaker Co., Inc., A. G. 29
Simplex Valve & Meter Company .. 166
Skinner Co., M. B. 36
Smith Mfg. Co., A. P. 66
Solvay Sales Corp. 58, 158
Stellwagen, Robert H. 193
Stewart Iron Works Co., Inc. 64
Streamline Pipe & Fittings Div. ... 44
Street and Traffic Safety Lighting Bureau 130c
Superior Engines Division 61
Syntron Company 169

Tarrant Manufacturing Co. 187
Tennessee Corp. 48
Texas Co. 2, 20
Toledo Testing Laboratory 193
Trackson Company 150

Underwood Corporation 75
Union Metal Manufacturing Co. .. 130d
U. S. Bronze Sign Co., Inc. 186
U. S. Pipe & Foundry Co. 60
Universal Business Equipment Co... 183
Up-Right Scaffolds Co. 181

Wallace & Tiernan Co. ....Back Cover
Ward LaFrance Truck Division .. 36
Warren Foundry & Pipe Corp. 58
Welsbach Corp. 68, 193
Western Railroad Supply Co. 32
Westinghouse Electric Corp. ...136, 144
White Mfg. Co. 58
Wilkinson Products Company 72
Wood Co., R. D. 45
Worthington-Gamon Meter Co. 162
Worthington Pump & Machinery Corp. 49, 50, 51, 73

Professional Service Directory—189, 190, 191, 192, 193

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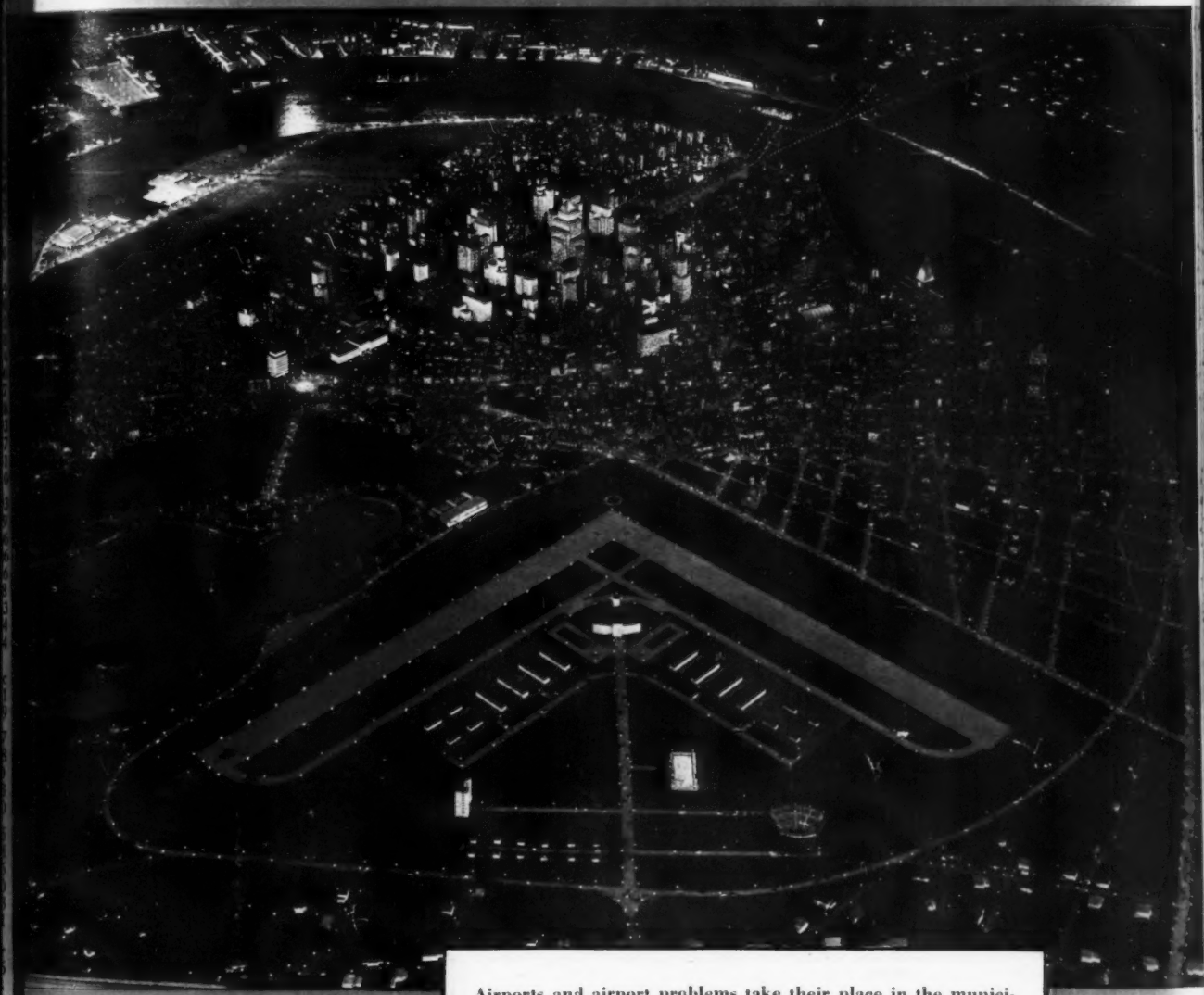

Airports and airport problems take their place in the municipal spotlight as the National Airport Show and Institute holds its annual meeting in Cleveland November 4-7. Scale models like this one will help those attending the meeting to understand and clarify the problems that they present.

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